

BDT Study and Recap

TMVA Using Correlation Based Method Result Collection

Fabio Lemmi¹ Huiling Hua¹ Hongbo Liao¹ Hideki Okawa²
Yu Zhang²

¹IHEP

²Fudan University

IHEP Group Meeting, 2021

Outline

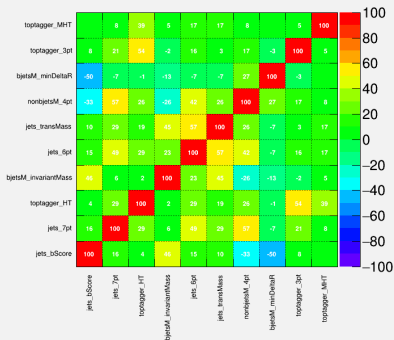
1 1tau1l

2 1tau2l

3 2tau1l

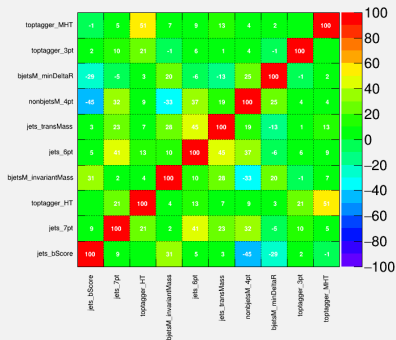
Correlation Matrix (signal)

(10 input variables)

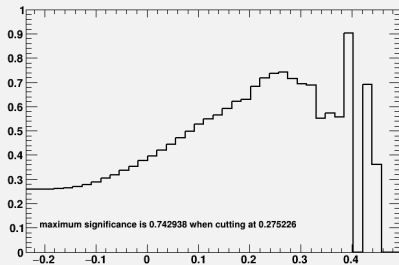


Correlation Matrix (background)

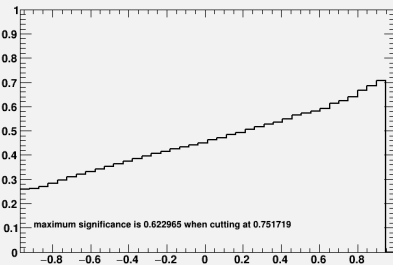
(10 input variables)



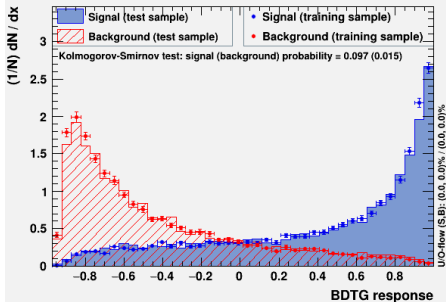
Significance of BDT(10 inputs)



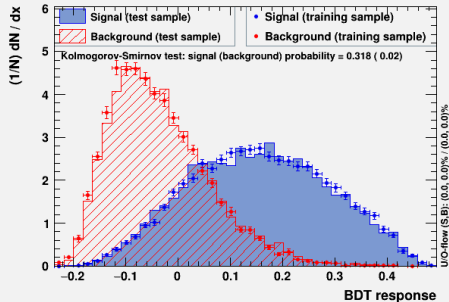
Significance of BDTG(10 inputs)



TMVA overtraining check for classifier: BDTG(10 inputs)

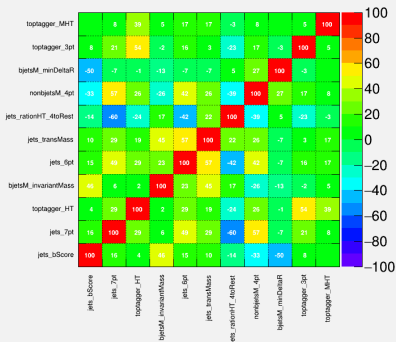


TMVA overtraining check for classifier: BDT(10 inputs)



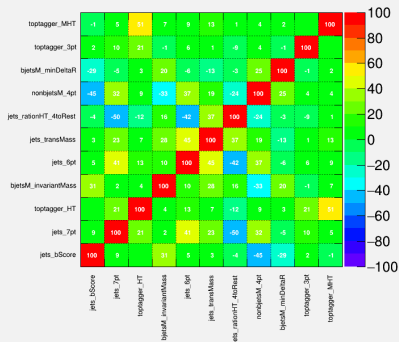
Correlation Matrix (signal)

(11 input variables)

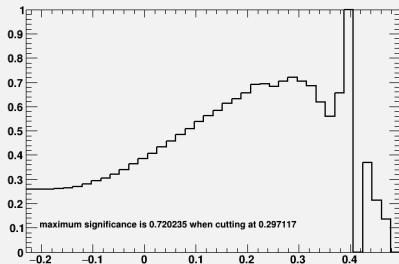


Correlation Matrix (background)

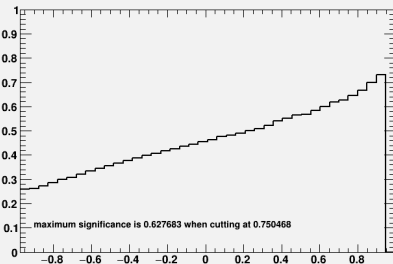
(11 input variables)



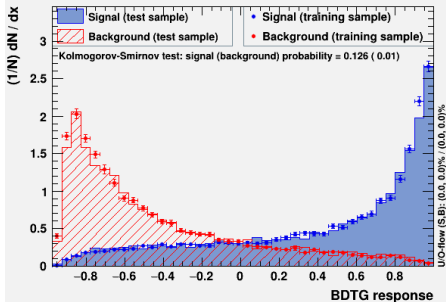
Significance of BDT(11 inputs)



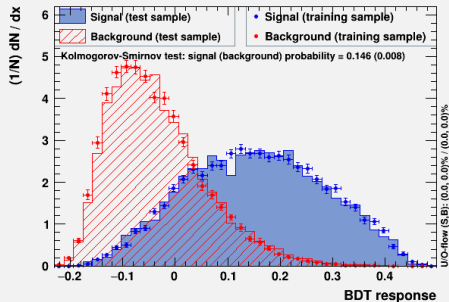
Significance of BDTG(11 inputs)



TMVA overtraining check for classifier: BDTG(11 inputs)

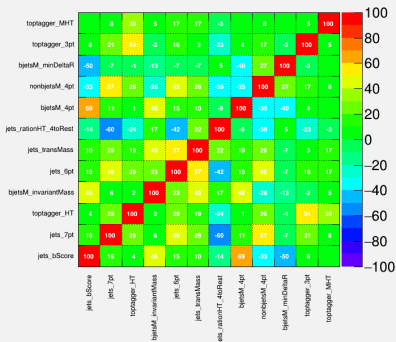


TMVA overtraining check for classifier: BDT(11 inputs)



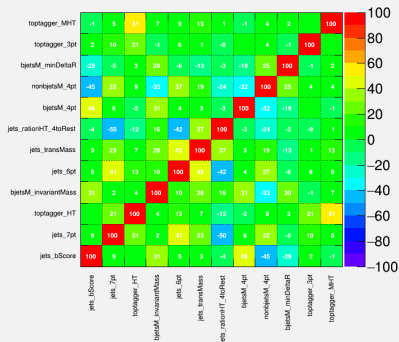
Correlation Matrix (signal)

(12 input variables)

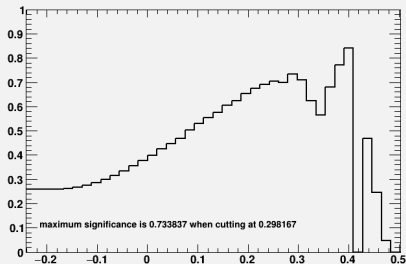


Correlation Matrix (background)

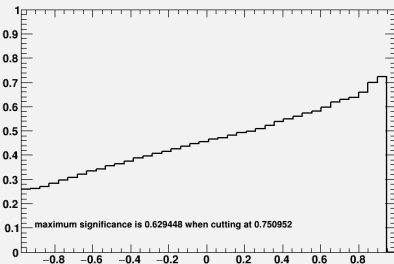
(12 input variables)



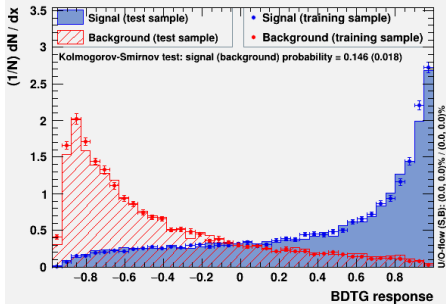
Significance of BDT(12 inputs)



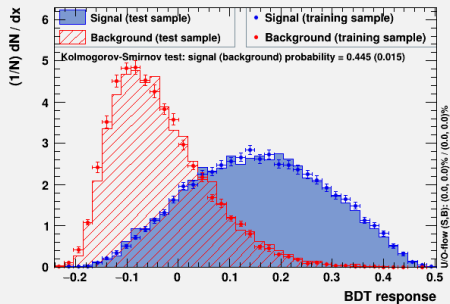
Significance of BDTG(12 inputs)



TMVA overtraining check for classifier: BDTG(12 inputs)

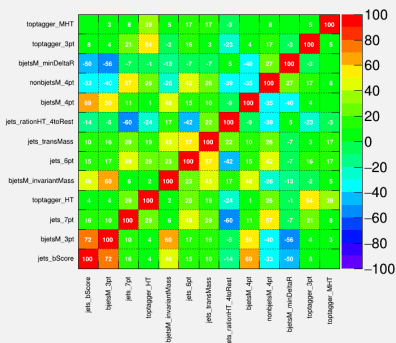


TMVA overtraining check for classifier: BDT(12 inputs)



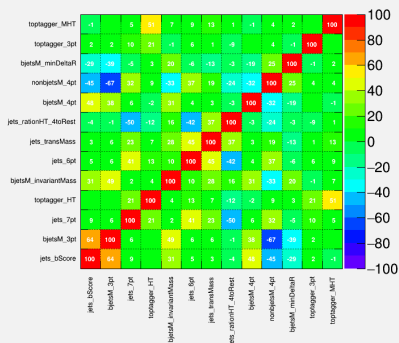
Correlation Matrix (signal)

(13 input variables)

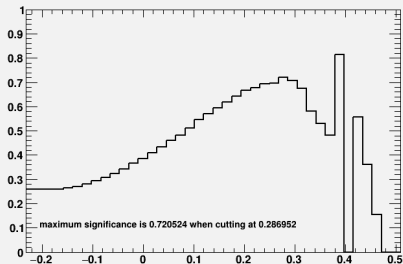


Correlation Matrix (background)

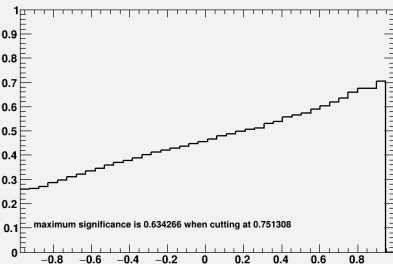
(13 input variables)



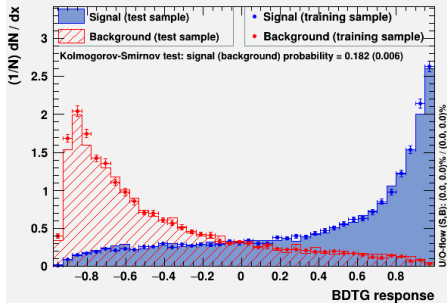
Significance of BDT(13 inputs)



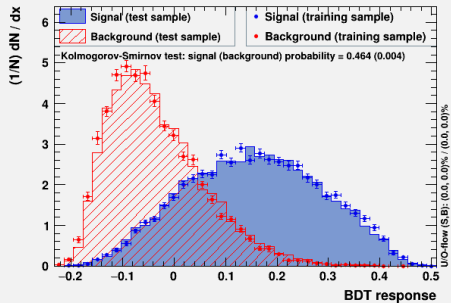
Significance of BDTG(13 inputs)



TMVA overtraining check for classifier: BDTG(13 inputs)

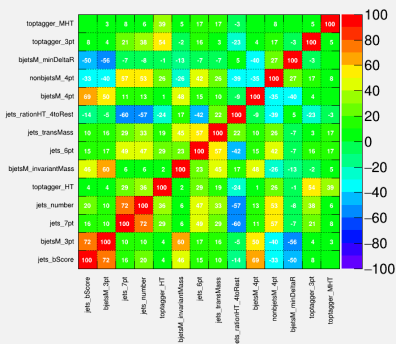


TMVA overtraining check for classifier: BDT(13 inputs)



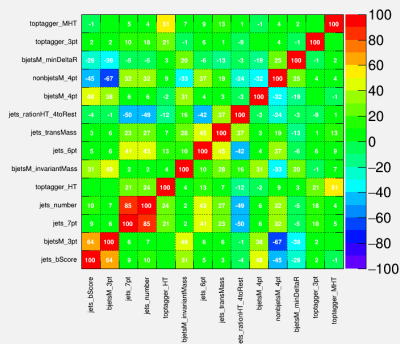
Correlation Matrix (signal)

(14 input variables)

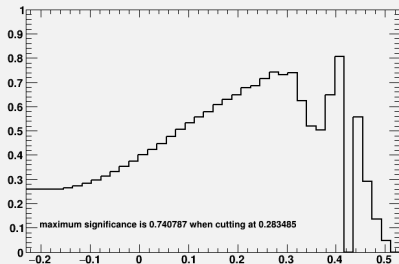


Correlation Matrix (background)

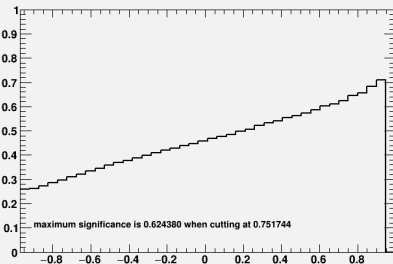
(14 input variables)



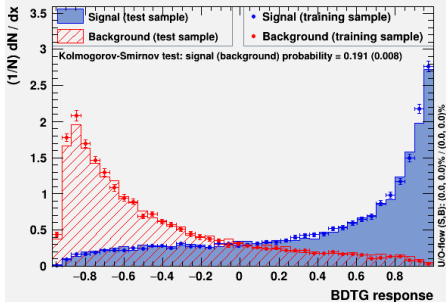
Significance of BDT(14 inputs)



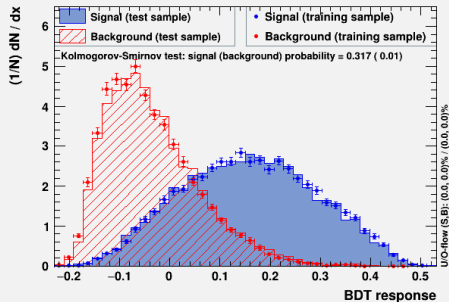
Significance of BDTG(14 inputs)



TMVA overtraining check for classifier: BDTG(14 inputs)

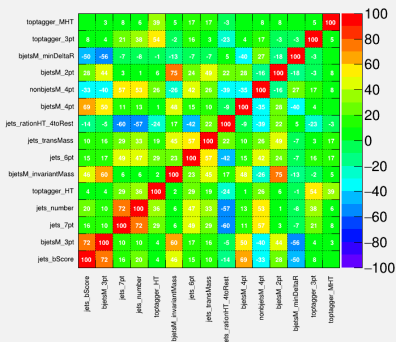


TMVA overtraining check for classifier: BDT(14 inputs)



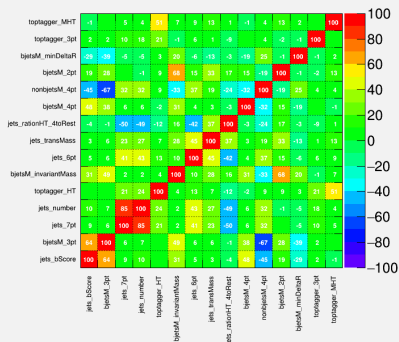
Correlation Matrix (signal)

(15 input variables)

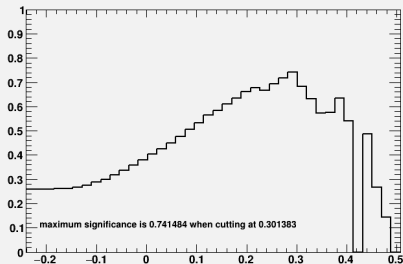


Correlation Matrix (background)

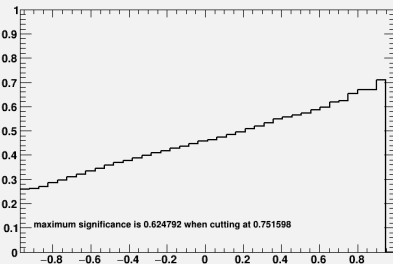
(15 input variables)



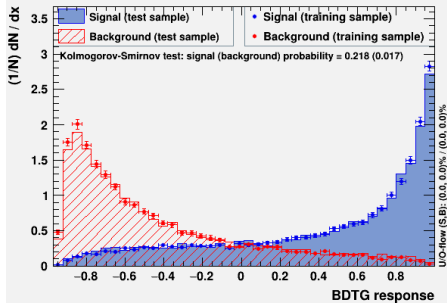
Significance of BDT(15 inputs)



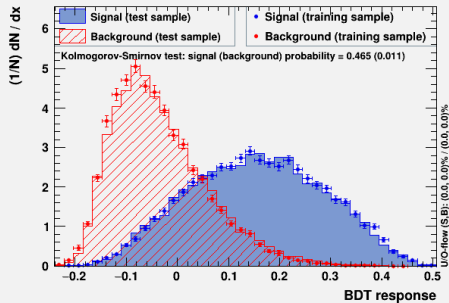
Significance of BDTG(15 inputs)



TMVA overtraining check for classifier: BDTG(15 inputs)

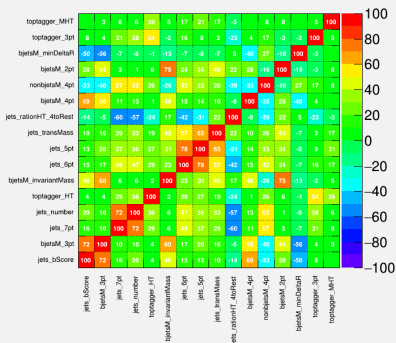


TMVA overtraining check for classifier: BDT(15 inputs)



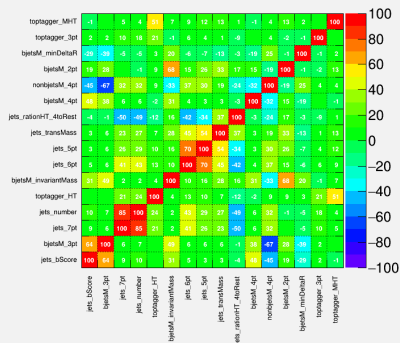
Correlation Matrix (signal)

(16 input variables)

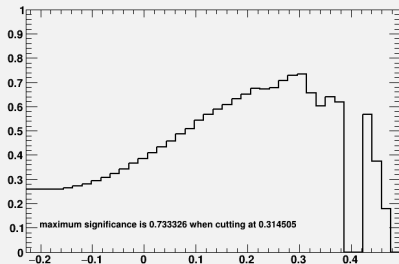


Correlation Matrix (background)

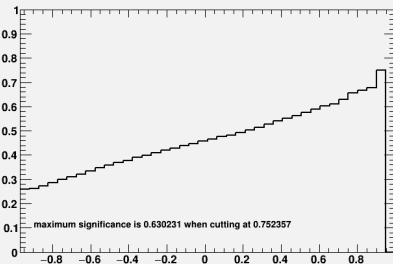
(16 input variables)



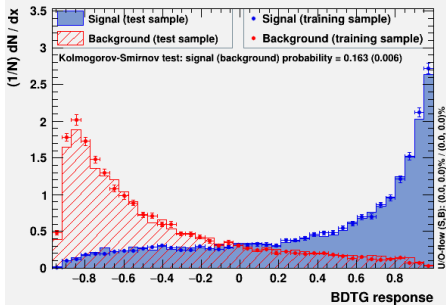
Significance of BDT(16 inputs)



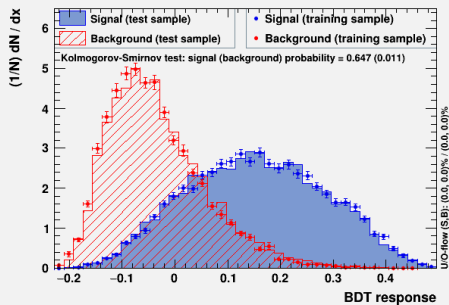
Significance of BDTG(16 inputs)



TMVA overtraining check for classifier: BDTG(16 inputs)

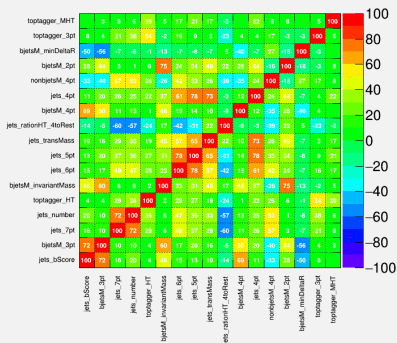


TMVA overtraining check for classifier: BDT(16 inputs)



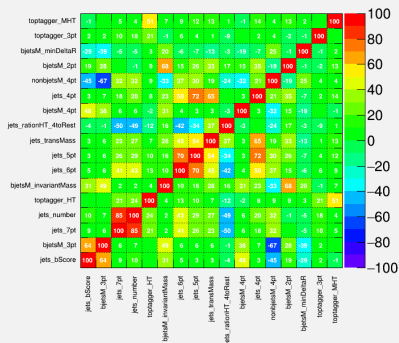
Correlation Matrix (signal)

(17 input variables)

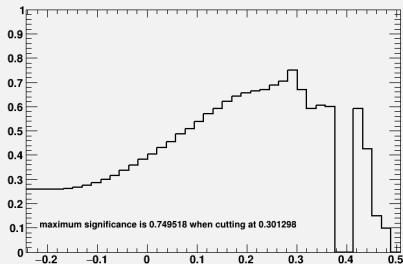


Correlation Matrix (background)

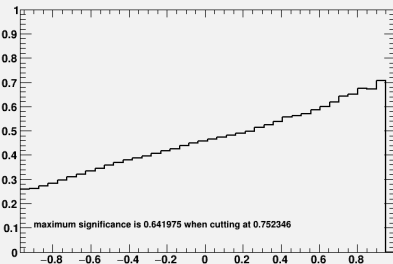
(17 input variables)



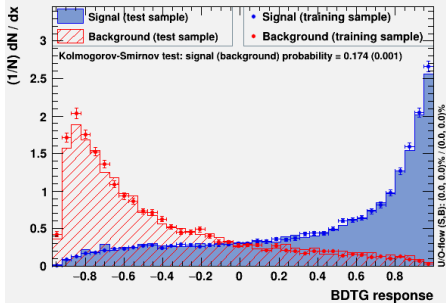
Significance of BDT(17 inputs)



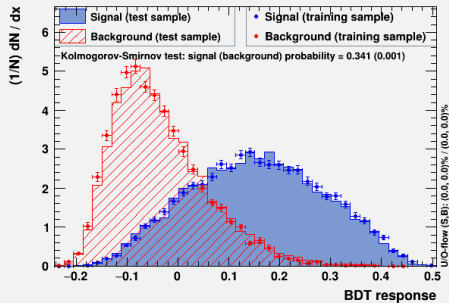
Significance of BDTG(17 inputs)



TMVA overtraining check for classifier: BDTG(17 inputs)

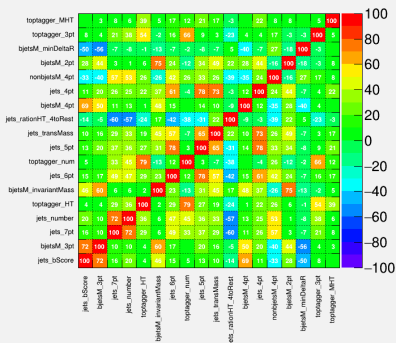


TMVA overtraining check for classifier: BDT(17 inputs)



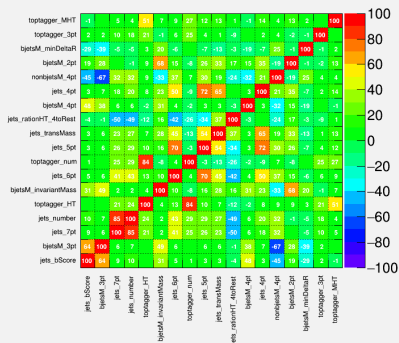
Correlation Matrix (signal)

(18 input variables)

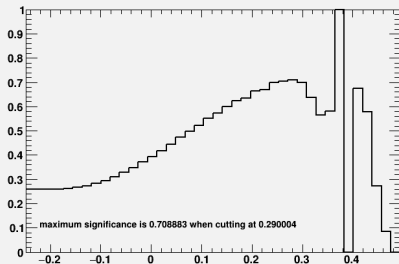


Correlation Matrix (background)

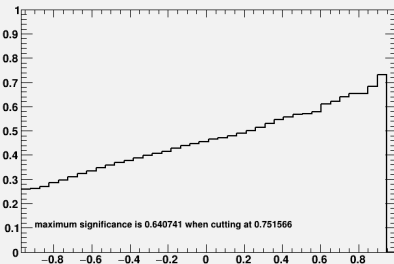
(18 input variables)



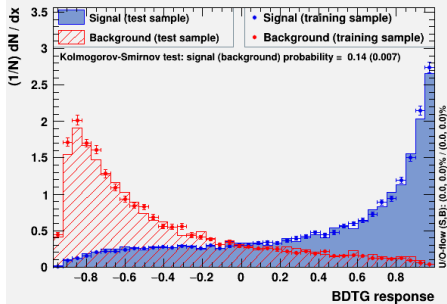
Significance of BDT(18 inputs)



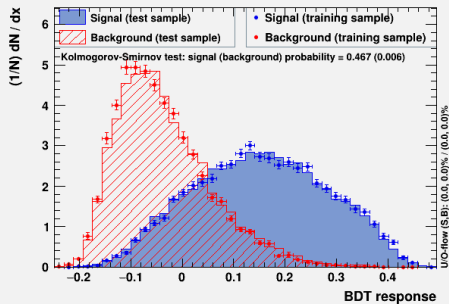
Significance of BDTG(18 inputs)



TMVA overtraining check for classifier: BDTG(18 inputs)

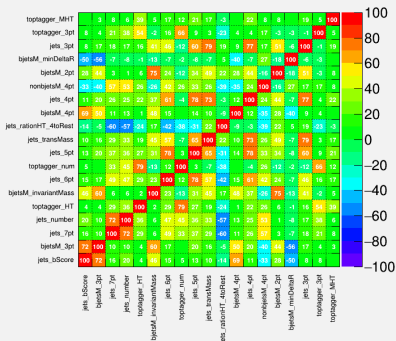


TMVA overtraining check for classifier: BDT(18 inputs)



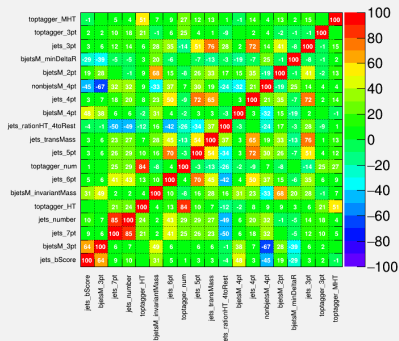
Correlation Matrix (signal)

(19 input variables)

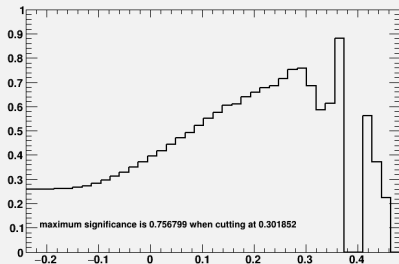


Correlation Matrix (background)

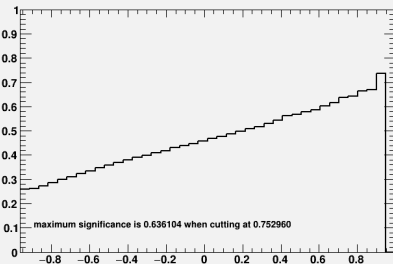
(19 input variables)



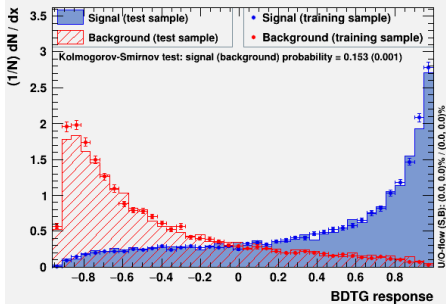
Significance of BDT(19 inputs)



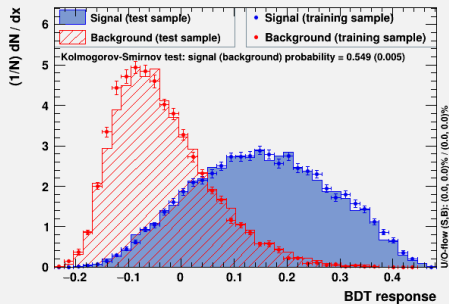
Significance of BDTG(19 inputs)



TMVA overtraining check for classifier: BDTG(19 inputs)

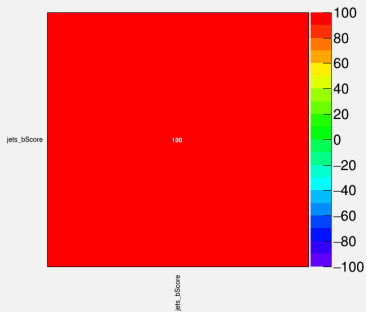


TMVA overtraining check for classifier: BDT(19 inputs)



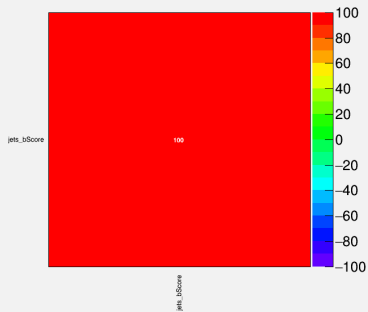
Correlation Matrix (signal)

(1 input variables)

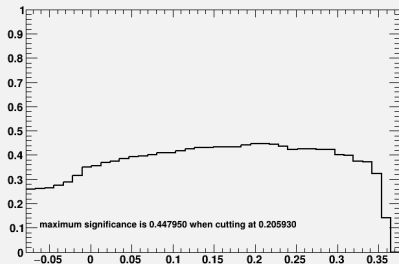


Correlation Matrix (background)

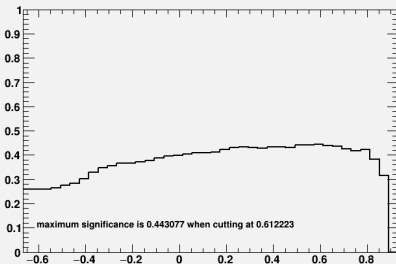
(1 input variables)



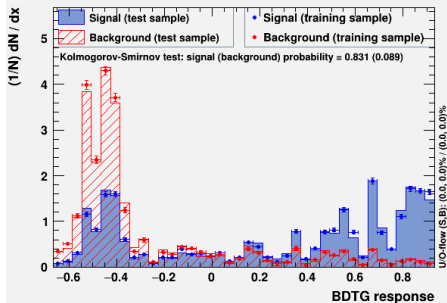
Significance of BDT(1 inputs)



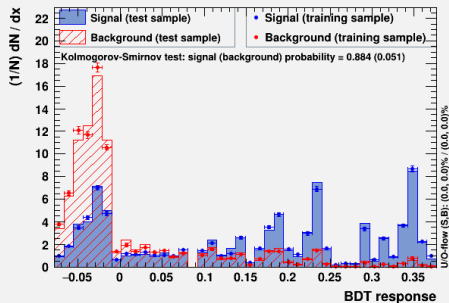
Significance of BDTG(1 inputs)



TMVA overtraining check for classifier: BDTG(1 inputs)

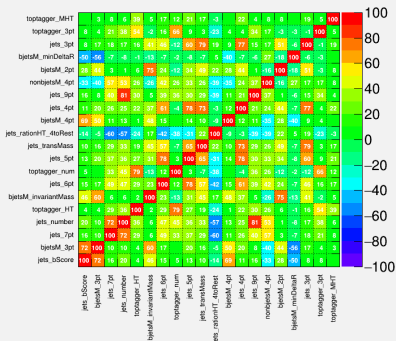


TMVA overtraining check for classifier: BDT(1 inputs)



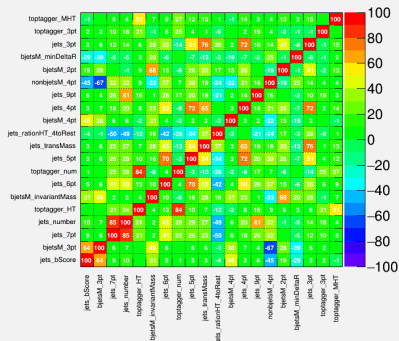
Correlation Matrix (signal)

(20 input variables)

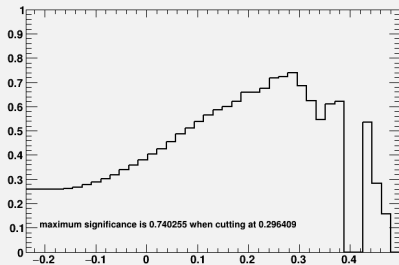


Correlation Matrix (background)

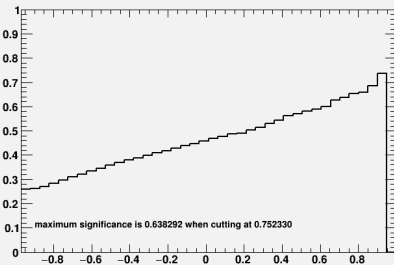
(20 input variables)



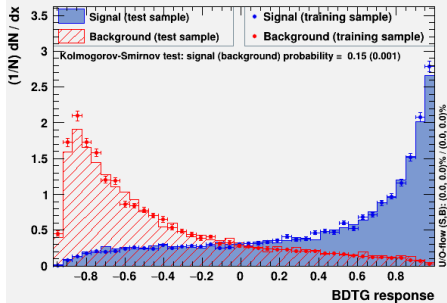
Significance of BDT(20 inputs)



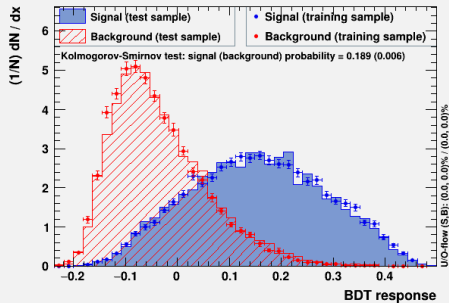
Significance of BDTG(20 inputs)



TMVA overtraining check for classifier: BDT(20 inputs)

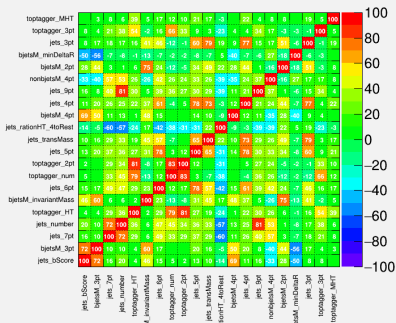


TMVA overtraining check for classifier: BDT(20 inputs)



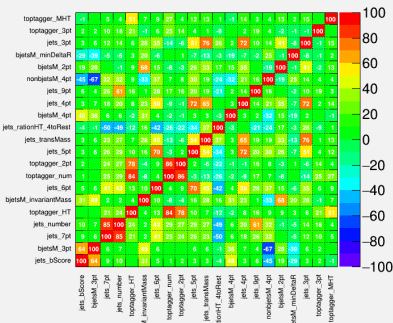
Correlation Matrix (signal)

(21 input variables)

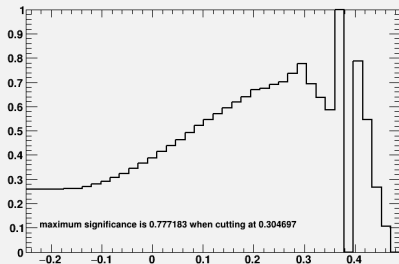


Correlation Matrix (background)

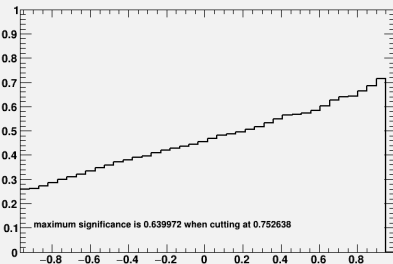
(21 input variables)



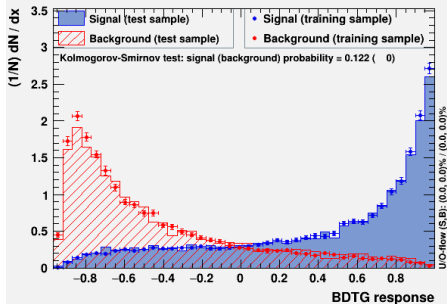
Significance of BDT(21 inputs)



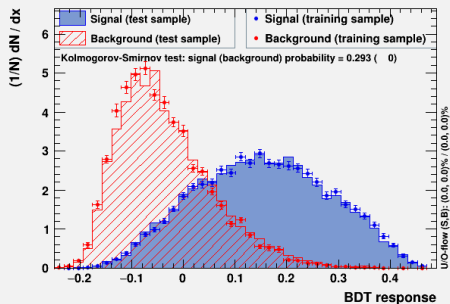
Significance of BDTG(21 inputs)



TMVA overtraining check for classifier: BDTG(21 inputs)

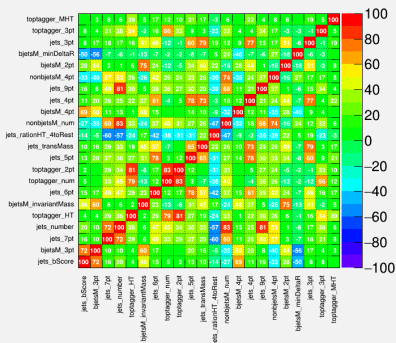


TMVA overtraining check for classifier: BDT(21 inputs)



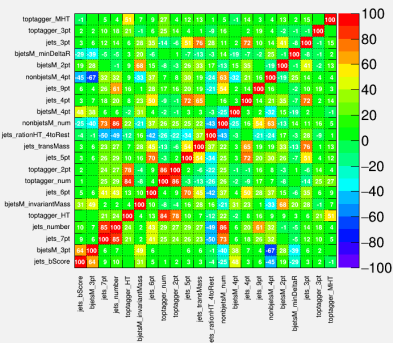
Correlation Matrix (signal)

(22 input variables)

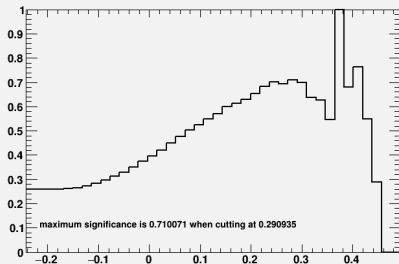


Correlation Matrix (background)

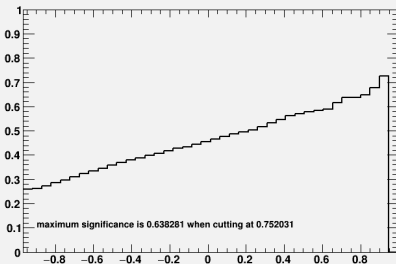
(22 input variables)



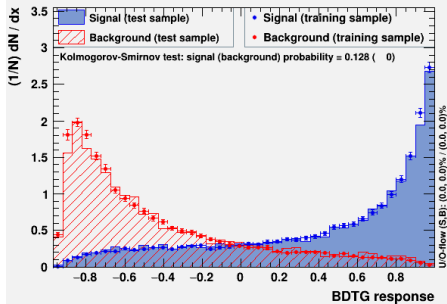
Significance of BDT(22 inputs)



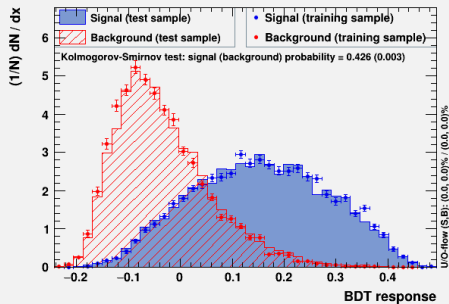
Significance of BDTG(22 inputs)



TMVA overtraining check for classifier: BDTG(22 inputs)

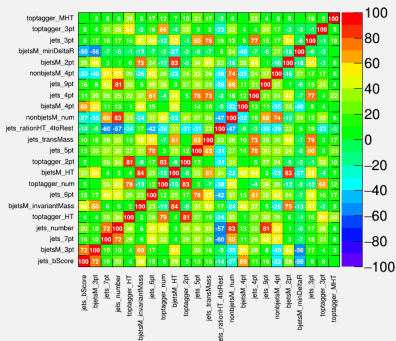


TMVA overtraining check for classifier: BDT(22 inputs)



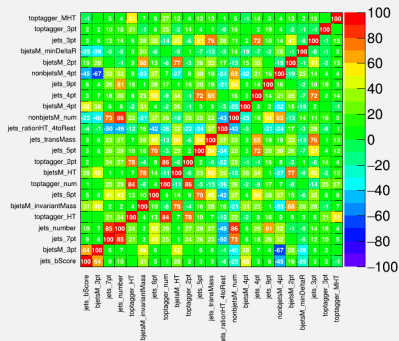
Correlation Matrix (signal)

(23 input variables)

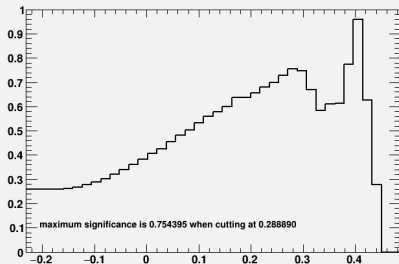


Correlation Matrix (background)

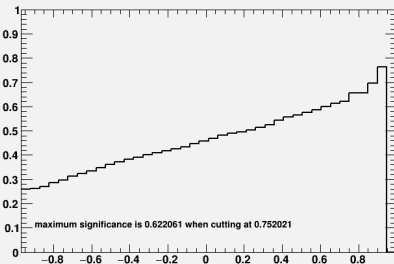
(23 input variables)



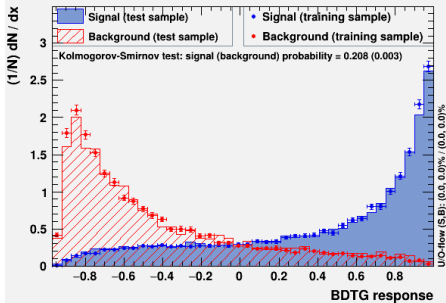
Significance of BDT(23 inputs)



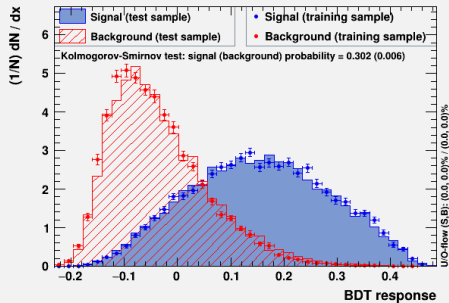
Significance of BDTG(23 inputs)



TMVA overtraining check for classifier: BDTG(23 inputs)

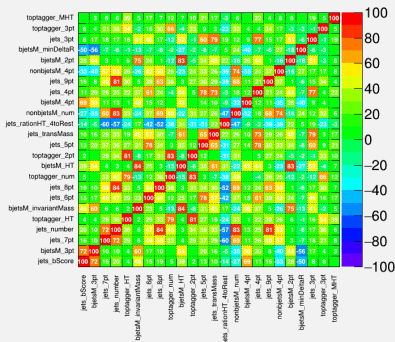


TMVA overtraining check for classifier: BDT(23 inputs)



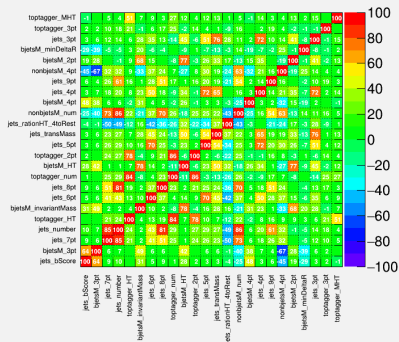
Correlation Matrix (signal)

(24 input variables)

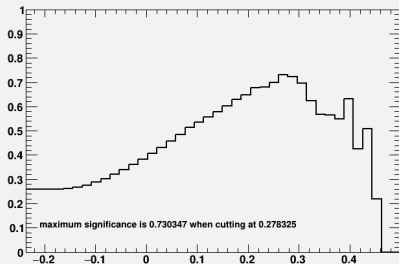


Correlation Matrix (background)

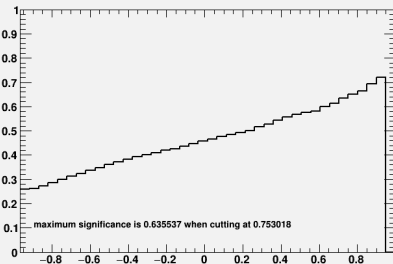
(24 input variables)



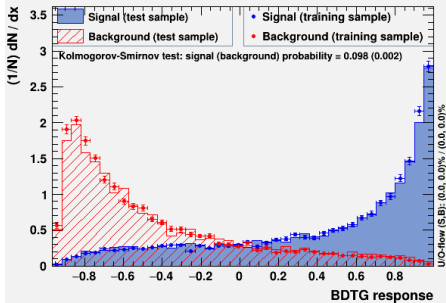
Significance of BDT(24 inputs)



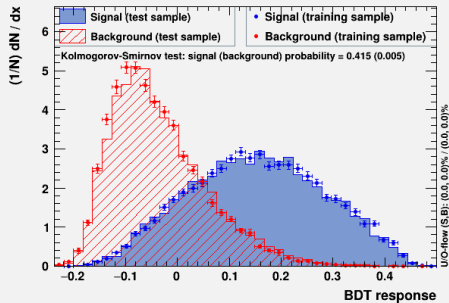
Significance of BDTG(24 inputs)



TMVA overtraining check for classifier: BDTG(24 inputs)

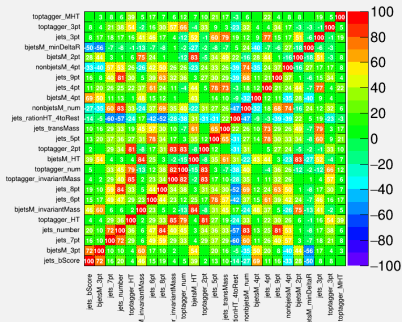


TMVA overtraining check for classifier: BDT(24 inputs)



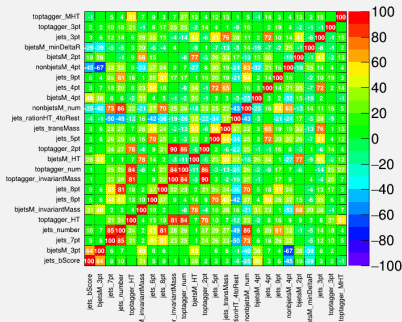
Correlation Matrix (signal)

(25 input variables)

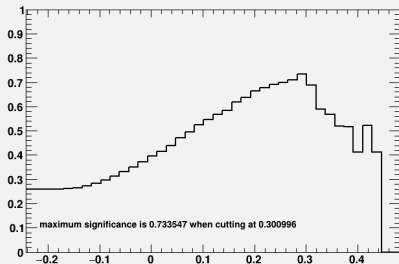


Correlation Matrix (background)

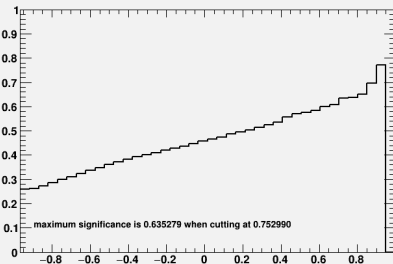
(25 input variables)



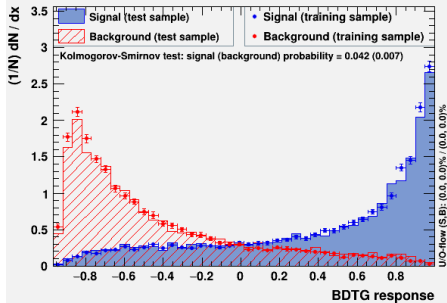
Significance of BDT(25 inputs)



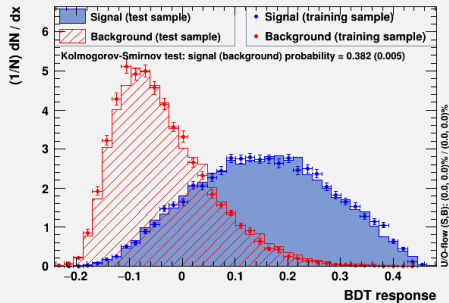
Significance of BDTG(25 inputs)



TMVA overtraining check for classifier: BDTG(25 inputs)

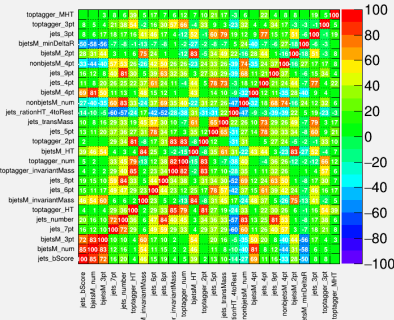


TMVA overtraining check for classifier: BDT(25 inputs)



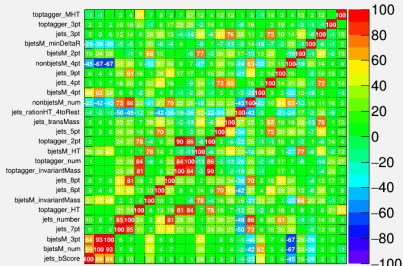
Correlation Matrix (signal)

(26 input variables)

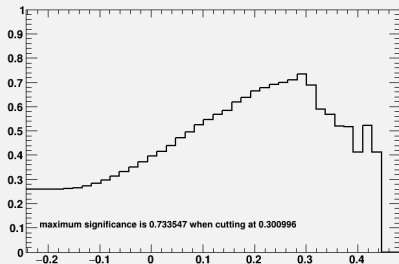


Correlation Matrix (background)

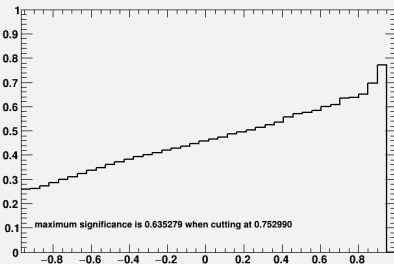
(26 input variables)



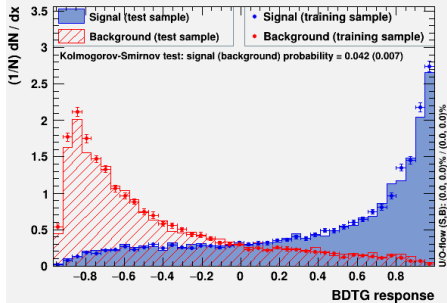
Significance of BDT(26 inputs)



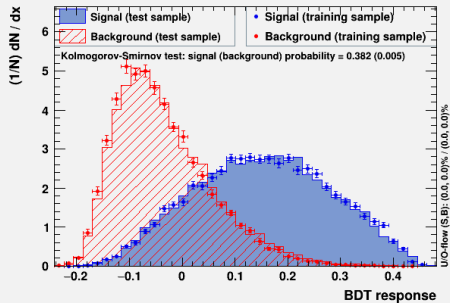
Significance of BDTG(26 inputs)



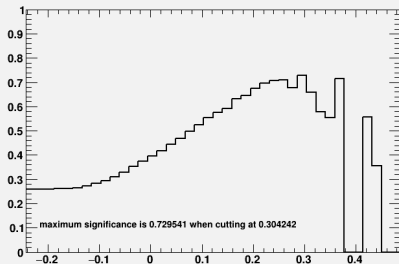
TMVA overtraining check for classifier: BDTG(26 inputs)



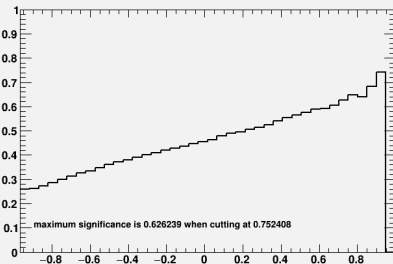
TMVA overtraining check for classifier: BDT(26 inputs)



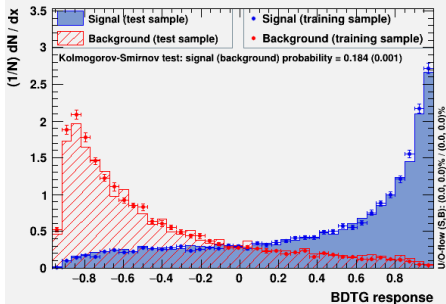
Significance of BDT(27 inputs)



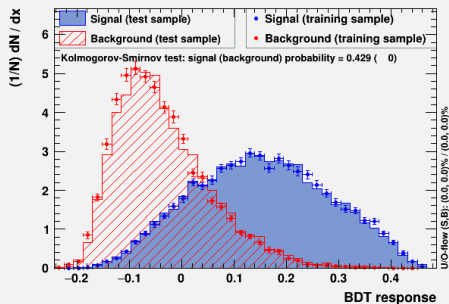
Significance of BDTG(27 inputs)



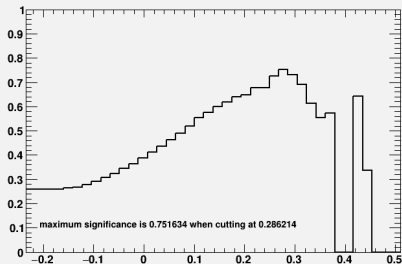
TMVA overtraining check for classifier: BDTG(27 inputs)



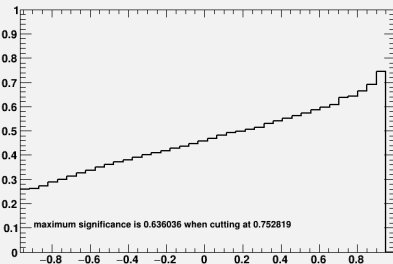
TMVA overtraining check for classifier: BDT(27 inputs)



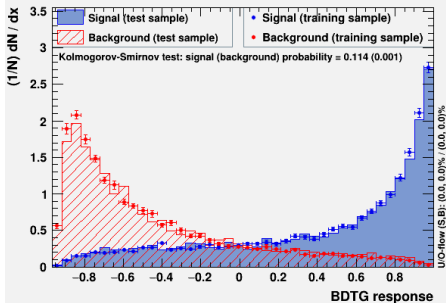
Significance of BDT(28 inputs)



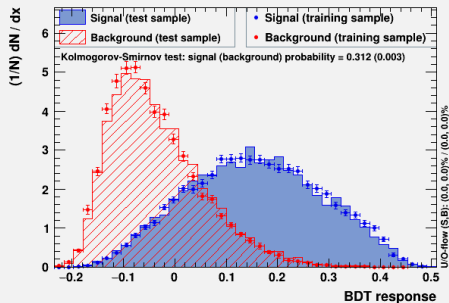
Significance of BDTG(28 inputs)



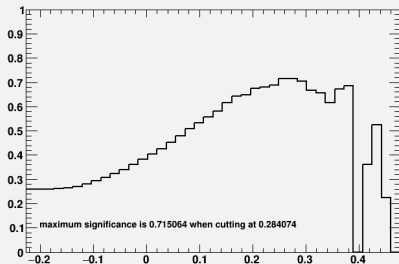
TMVA overtraining check for classifier: BDTG(28 inputs)



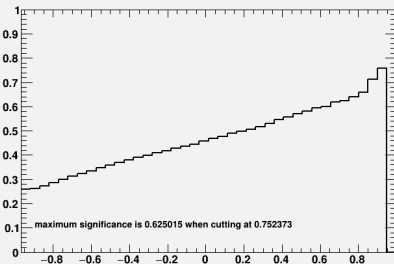
TMVA overtraining check for classifier: BDT(28 inputs)



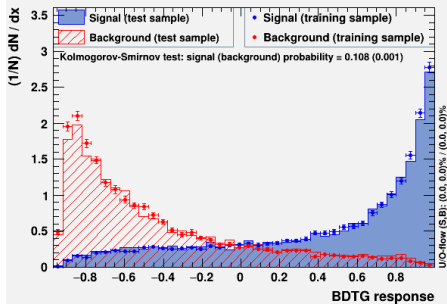
Significance of BDT(29 inputs)



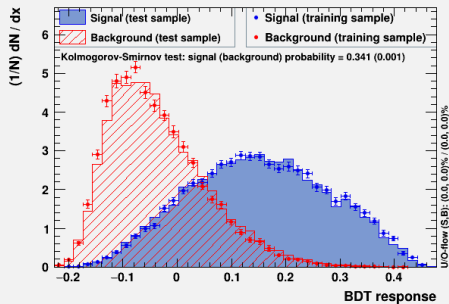
Significance of BDTG(29 inputs)



TMVA overtraining check for classifier: BDTG(29 inputs)

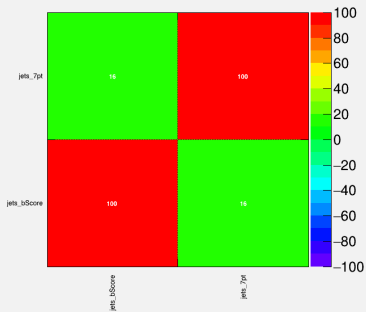


TMVA overtraining check for classifier: BDT(29 inputs)



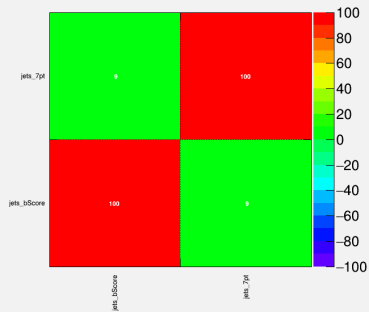
Correlation Matrix (signal)

(2 input variables)

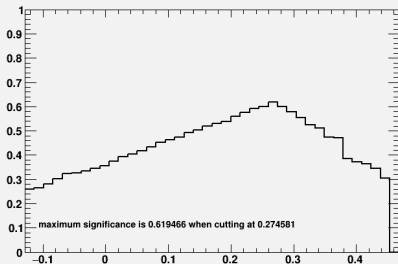


Correlation Matrix (background)

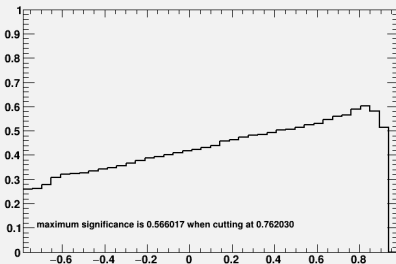
(2 input variables)



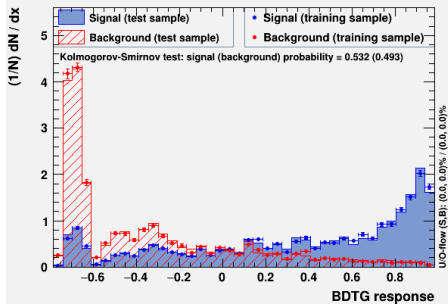
Significance of BDT(2 inputs)



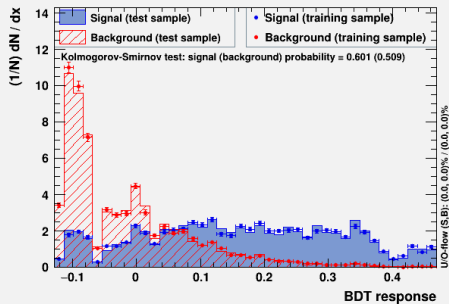
Significance of BDTG(2 inputs)



TMVA overtraining check for classifier: BDTG(2 inputs)

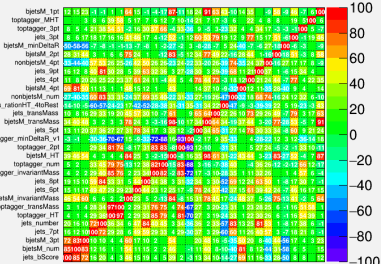


TMVA overtraining check for classifier: BDT(2 inputs)



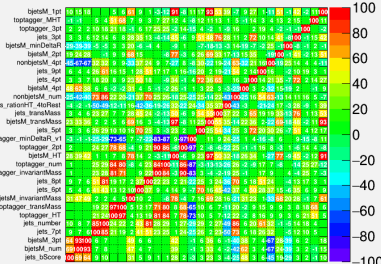
Correlation Matrix (signal)

(30 input variables)

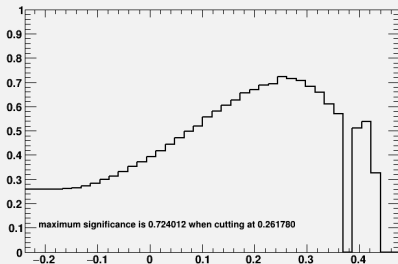


Correlation Matrix (background)

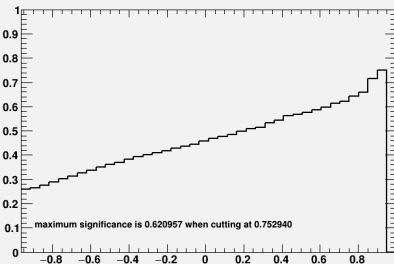
(30 input variables)



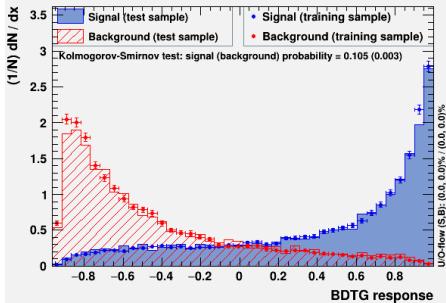
Significance of BDT(30 inputs)



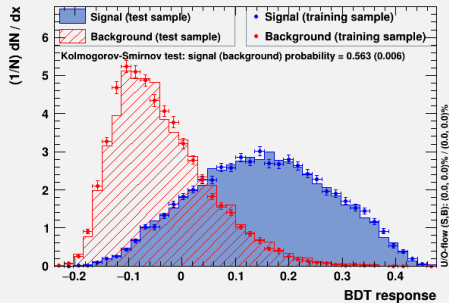
Significance of BDTG(30 inputs)



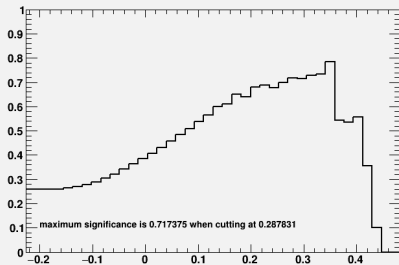
TMVA overtraining check for classifier: BDTG(30 inputs)



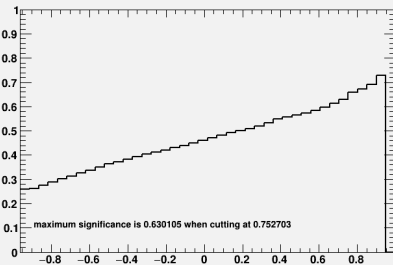
TMVA overtraining check for classifier: BDT(30 inputs)



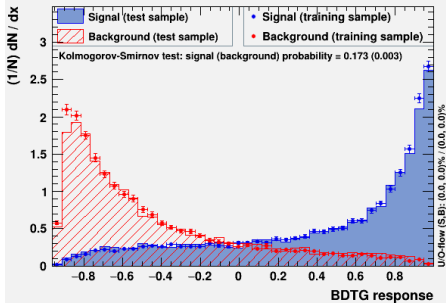
Significance of BDT(31 inputs)



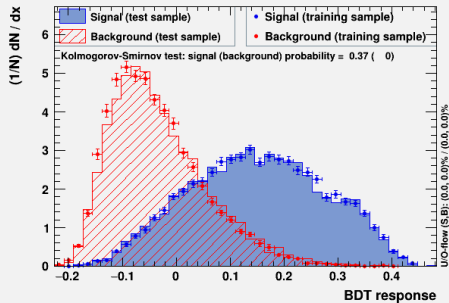
Significance of BDTG(31 inputs)



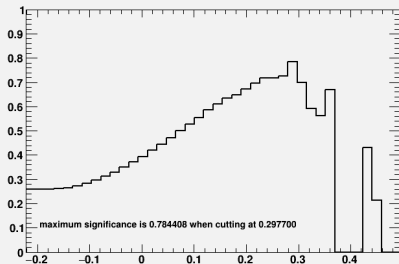
TMVA overtraining check for classifier: BDTG(31 inputs)



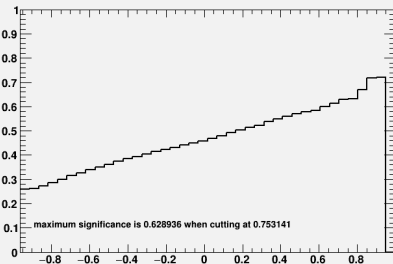
TMVA overtraining check for classifier: BDT(31 inputs)



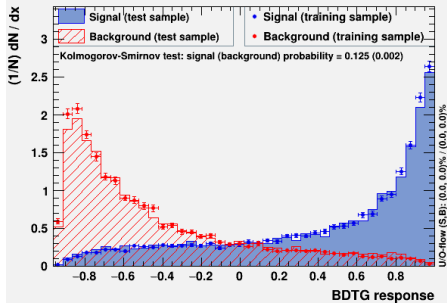
Significance of BDT(32 inputs)



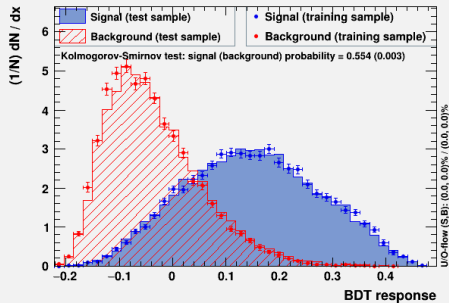
Significance of BDTG(32 inputs)



TMVA overtraining check for classifier: BDTG(32 inputs)

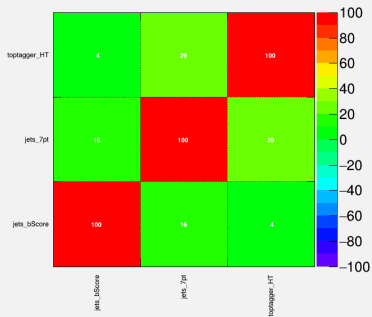


TMVA overtraining check for classifier: BDT(32 inputs)



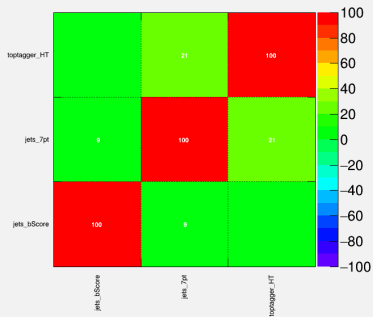
Correlation Matrix (signal)

(3 input variables)

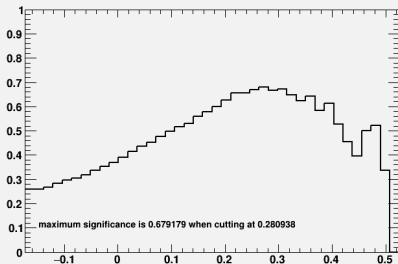


Correlation Matrix (background)

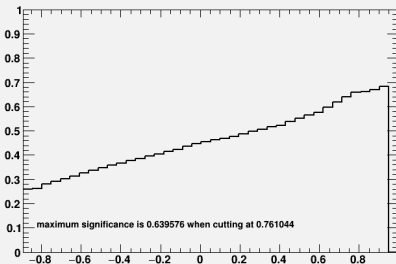
(3 input variables)



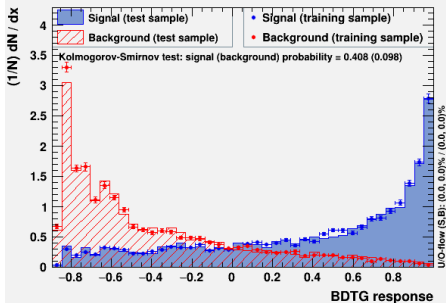
Significance of BDT(3 inputs)



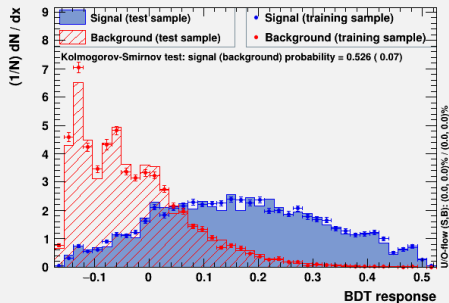
Significance of BDTG(3 inputs)



TMVA overtraining check for classifier: BDTG(3 inputs)

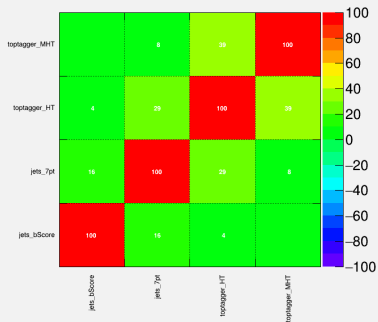


TMVA overtraining check for classifier: BDT(3 inputs)



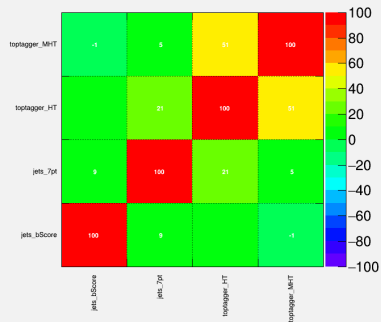
Correlation Matrix (signal)

(4 input variables)

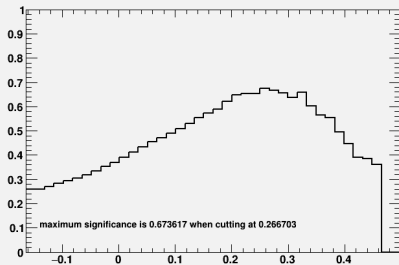


Correlation Matrix (background)

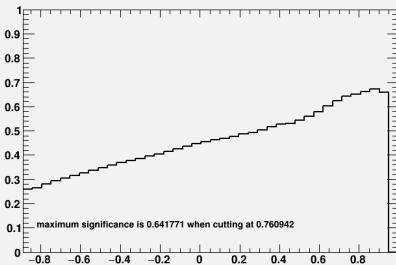
(4 input variables)



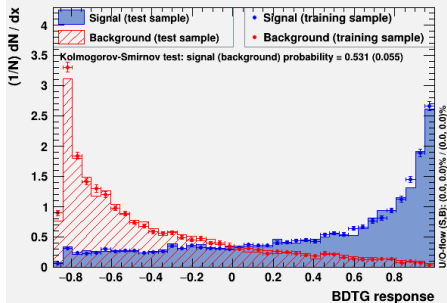
Significance of BDT(4 inputs)



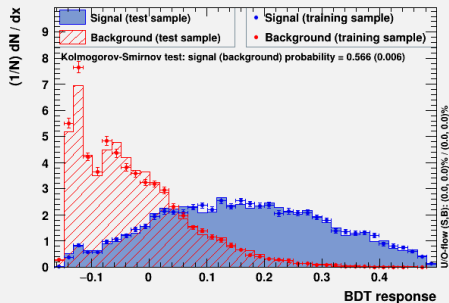
Significance of BDTG(4 inputs)



TMVA overtraining check for classifier: BDTG(4 inputs)

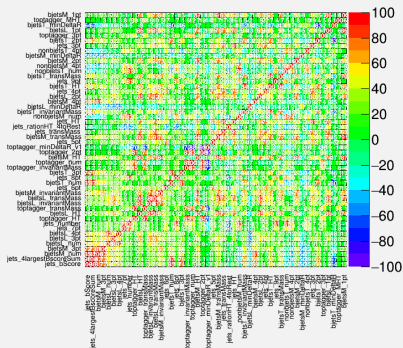


TMVA overtraining check for classifier: BDT(4 inputs)



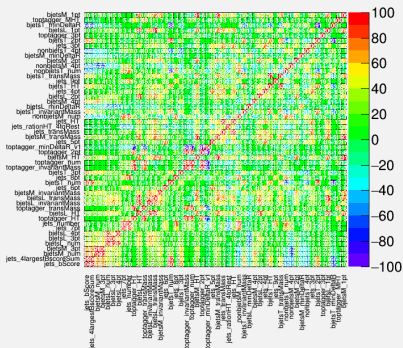
Correlation Matrix (signal)

(50 input variables)

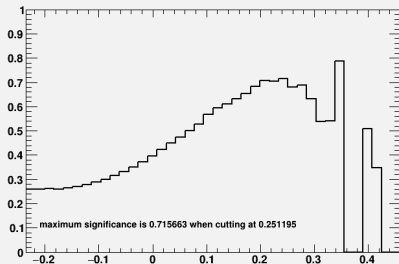


Correlation Matrix (background)

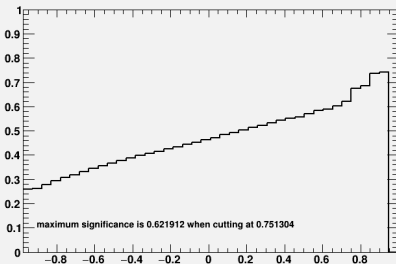
(50 input variables)



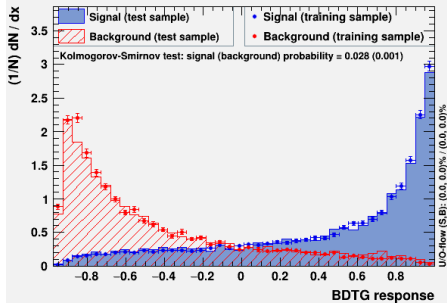
Significance of BDT(50 inputs)



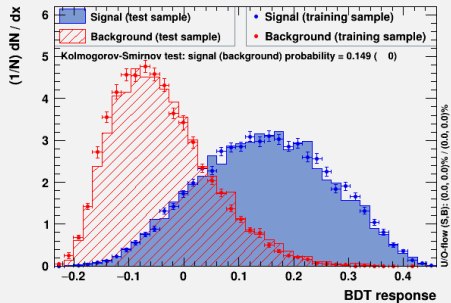
Significance of BDTG(50 inputs)



TMVA overtraining check for classifier: BDTG(50 inputs)

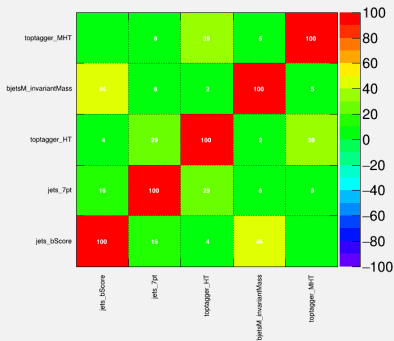


TMVA overtraining check for classifier: BDT(50 inputs)



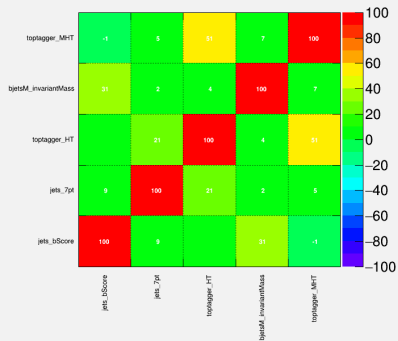
Correlation Matrix (signal)

(5 input variables)

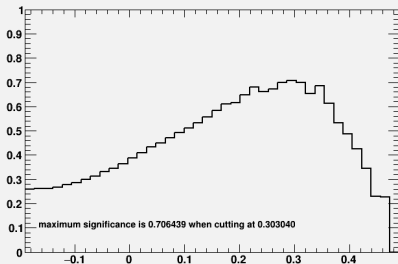


Correlation Matrix (background)

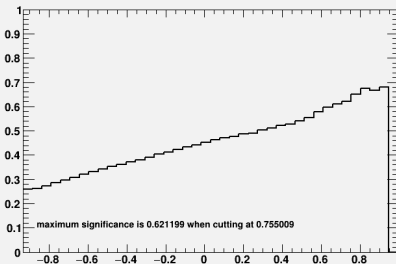
(5 input variables)



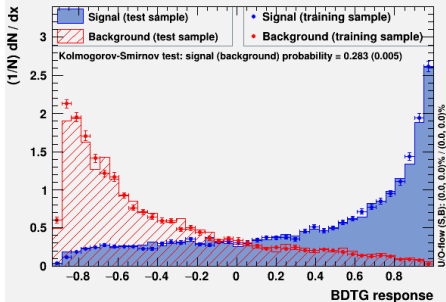
Significance of BDT(5 inputs)



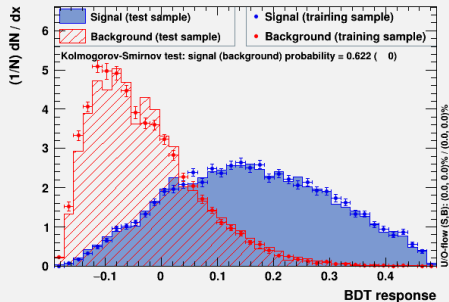
Significance of BDTG(5 inputs)



TMVA overtraining check for classifier: BDTG(5 inputs)

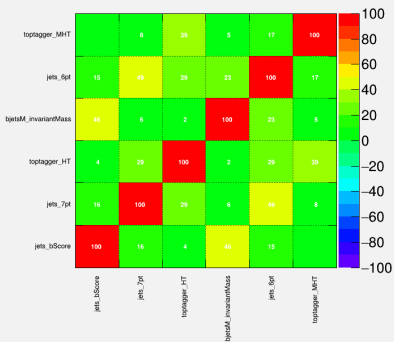


TMVA overtraining check for classifier: BDT(5 inputs)



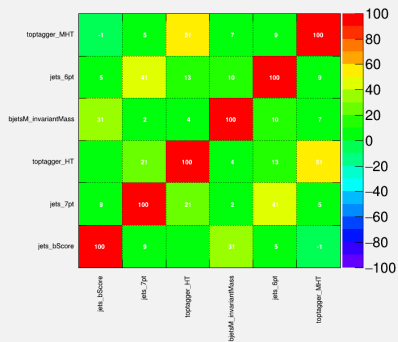
Correlation Matrix (signal)

(6 input variables)

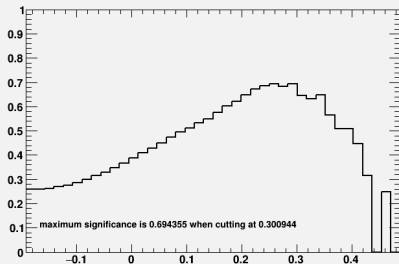


Correlation Matrix (background)

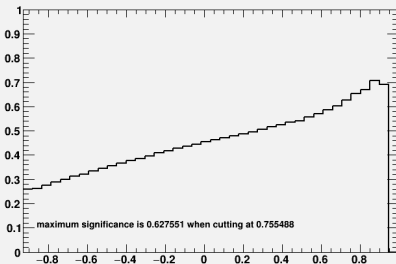
(6 input variables)



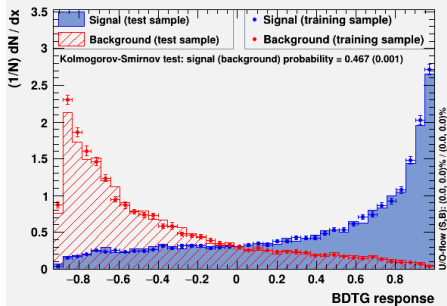
Significance of BDT(6 inputs)



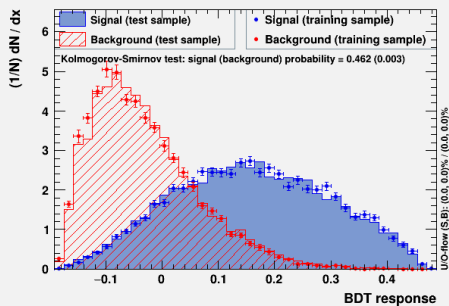
Significance of BDTG(6 inputs)



TMVA overtraining check for classifier: BDTG(6 inputs)

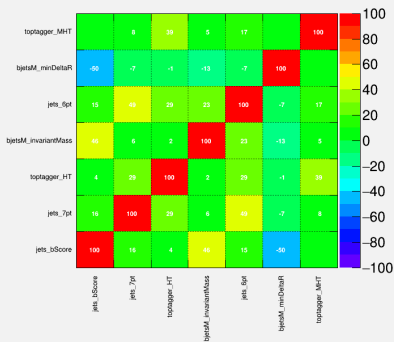


TMVA overtraining check for classifier: BDT(6 inputs)



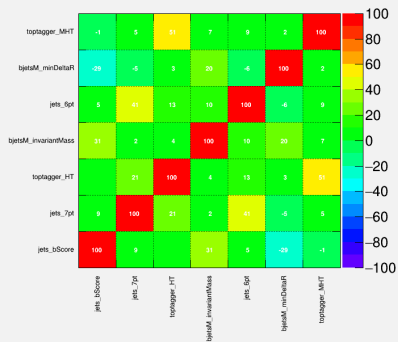
Correlation Matrix (signal)

(7 input variables)

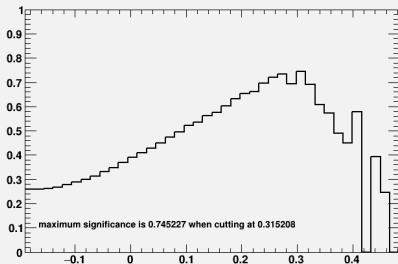


Correlation Matrix (background)

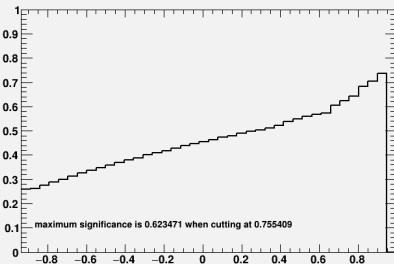
(7 input variables)



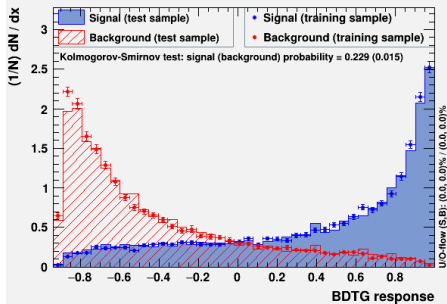
Significance of BDT(7 inputs)



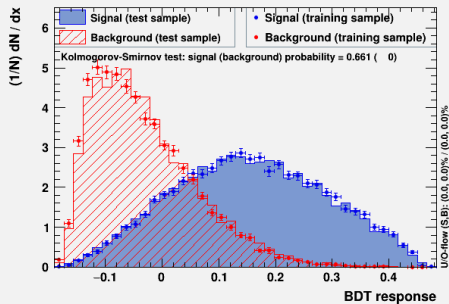
Significance of BDTG(7 inputs)



TMVA overtraining check for classifier: BDTG(7 inputs)

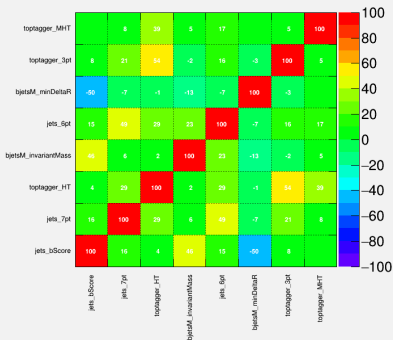


TMVA overtraining check for classifier: BDT(7 inputs)



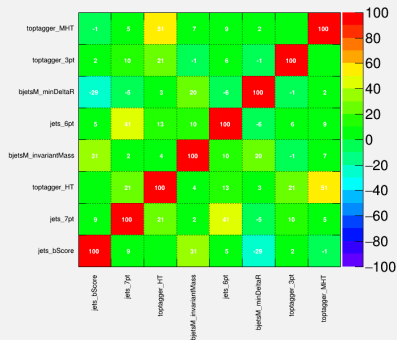
Correlation Matrix (signal)

(8 input variables)

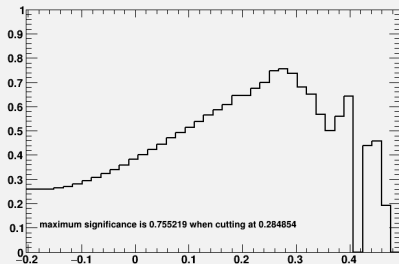


Correlation Matrix (background)

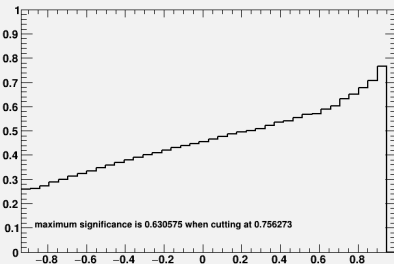
(8 input variables)



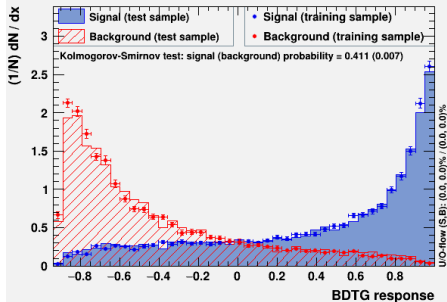
Significance of BDT(8 inputs)



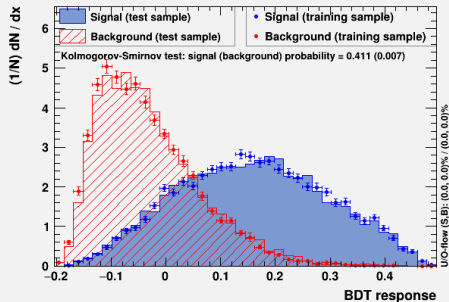
Significance of BDTG(8 inputs)



TMVA overtraining check for classifier: BDTG(8 inputs)

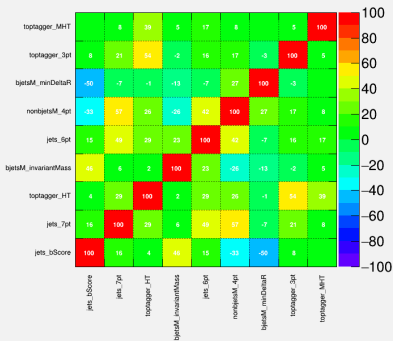


TMVA overtraining check for classifier: BDT(8 inputs)



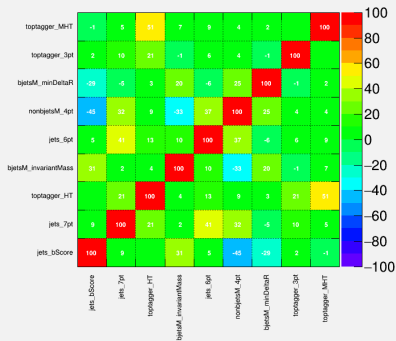
Correlation Matrix (signal)

(9 input variables)

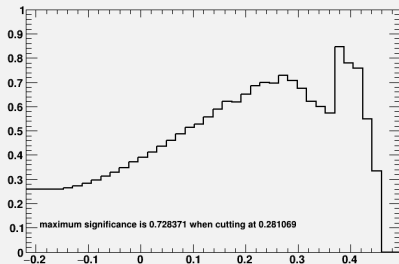


Correlation Matrix (background)

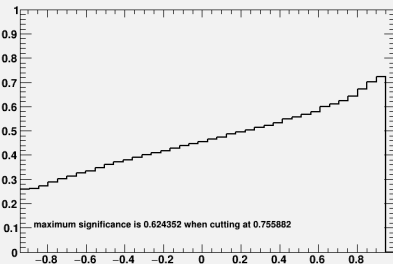
(9 input variables)



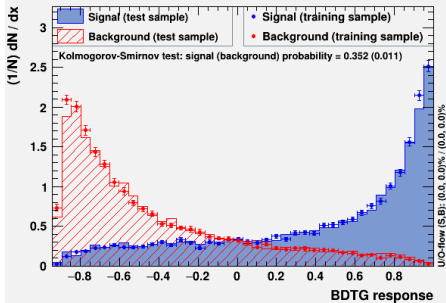
Significance of BDT(9 inputs)



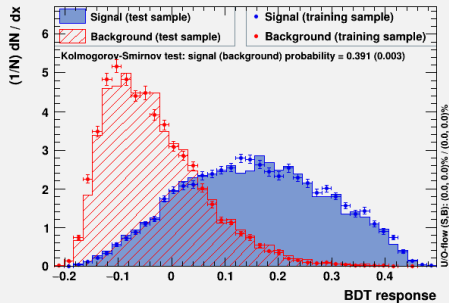
Significance of BDTG(9 inputs)



TMVA overtraining check for classifier: BDTG(9 inputs)



TMVA overtraining check for classifier: BDT(9 inputs)



Outline

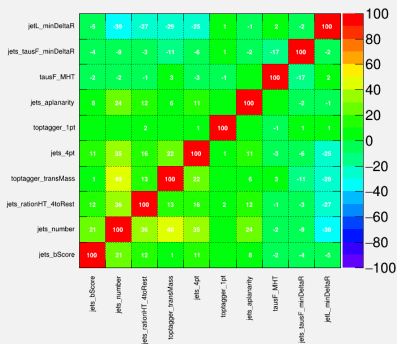
1 1tau1l

2 1tau2l

3 2tau1l

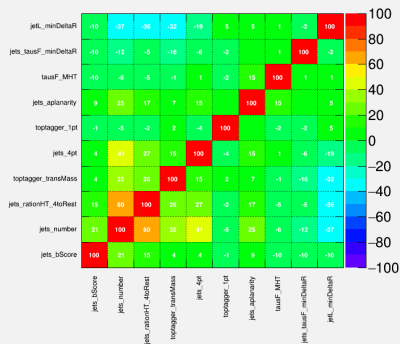
Correlation Matrix (signal)

(10 input variables)

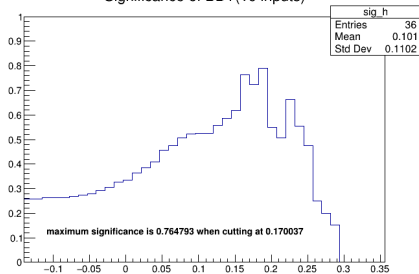


Correlation Matrix (background)

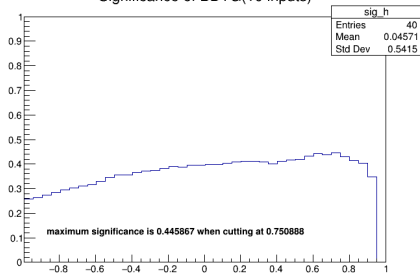
(10 input variables)



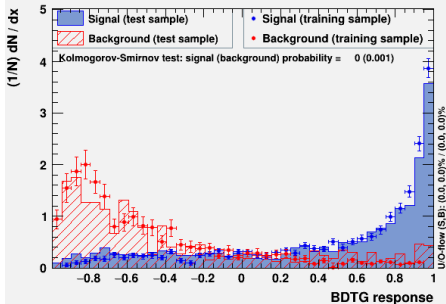
Significance of BDT(10 inputs)



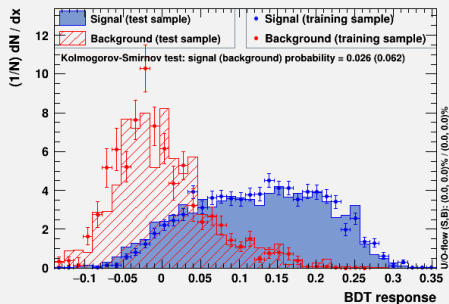
Significance of BDTG(10 inputs)



TMVA overtraining check for classifier: BDTG(10 inputs)

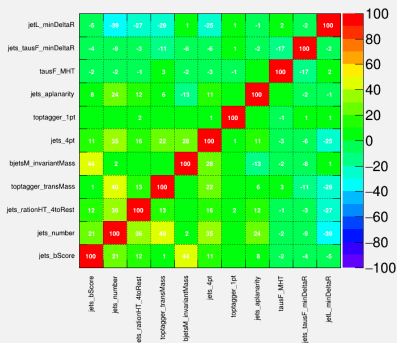


TMVA overtraining check for classifier: BDT(10 inputs)



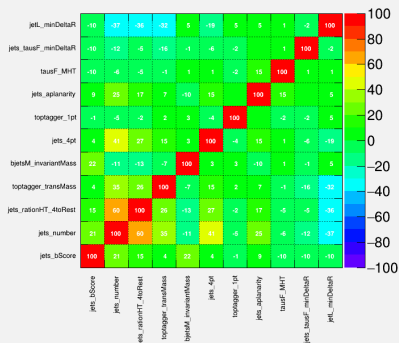
Correlation Matrix (signal)

(11 input variables)

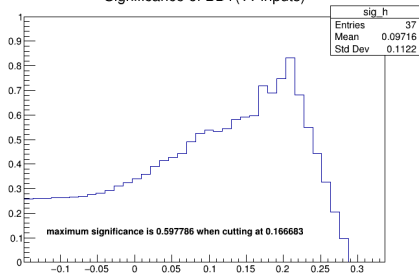


Correlation Matrix (background)

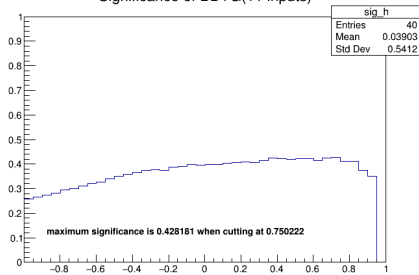
(11 input variables)



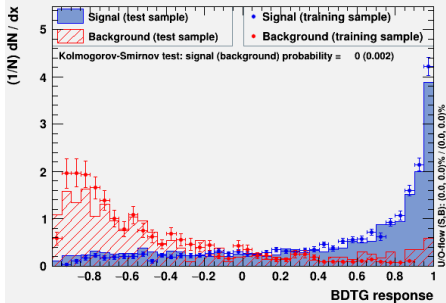
Significance of BDT(11 inputs)



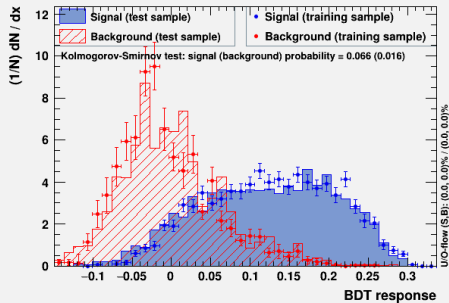
Significance of BDTG(11 inputs)



TMVA overtraining check for classifier: BDTG(11 inputs)

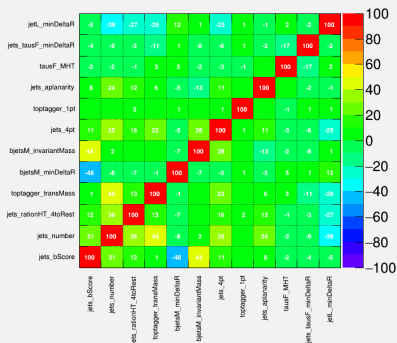


TMVA overtraining check for classifier: BDT(11 inputs)



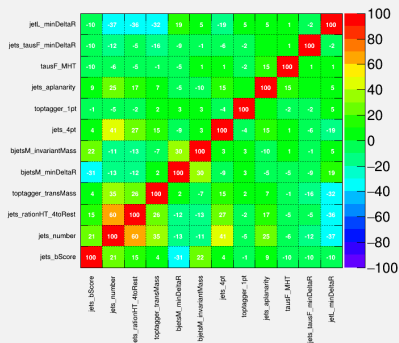
Correlation Matrix (signal)

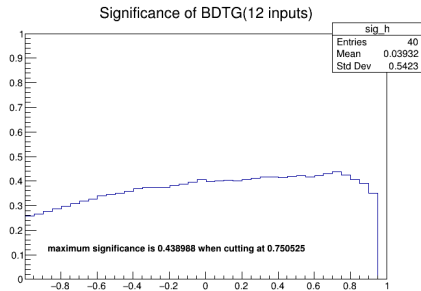
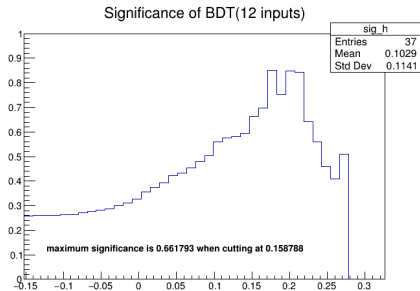
(12 input variables)



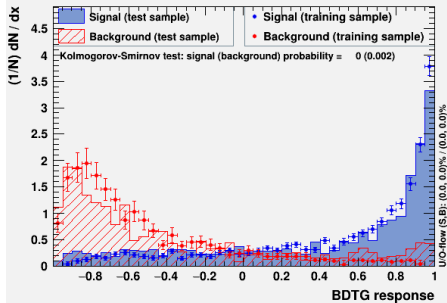
Correlation Matrix (background)

(12 input variables)

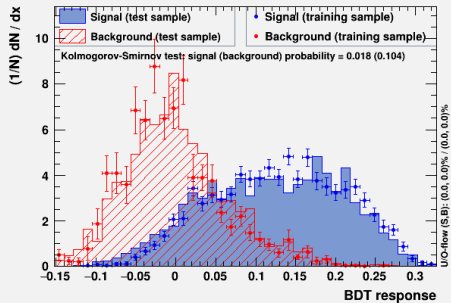




TMVA overtraining check for classifier: BDTG(12 inputs)

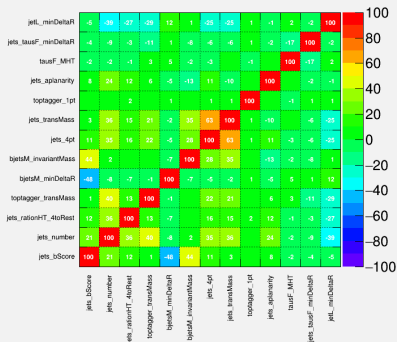


TMVA overtraining check for classifier: BDT(12 inputs)



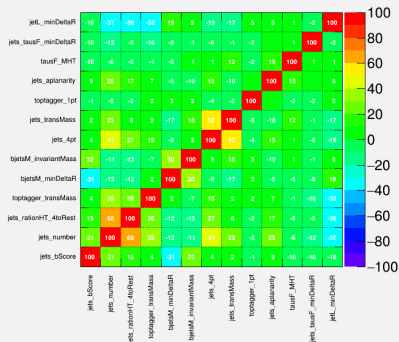
Correlation Matrix (signal)

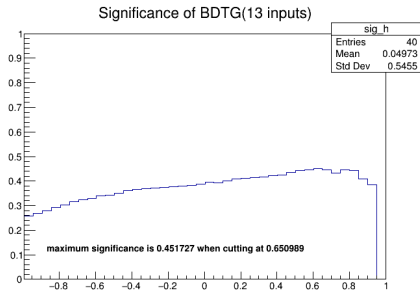
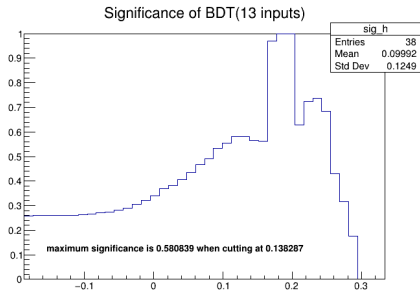
(13 input variables)



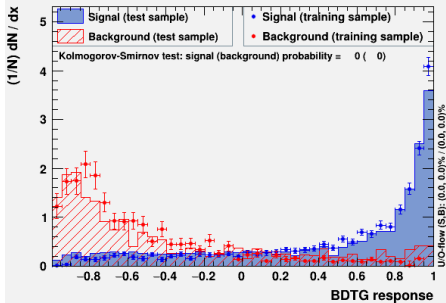
Correlation Matrix (background)

(13 input variables)

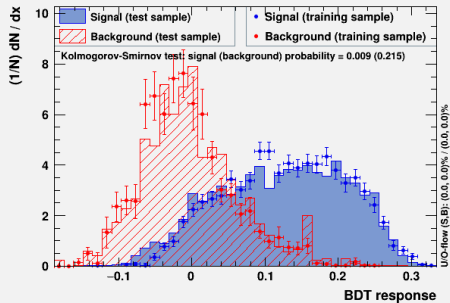




TMVA overtraining check for classifier: BDTG(13 inputs)

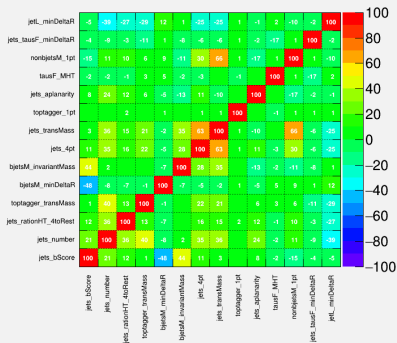


TMVA overtraining check for classifier: BDT(13 inputs)



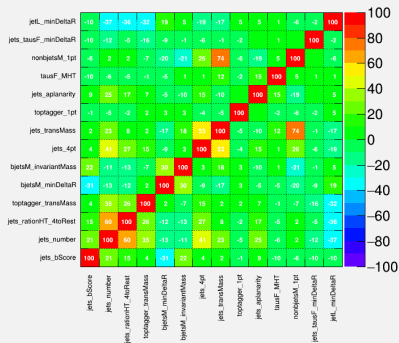
Correlation Matrix (signal)

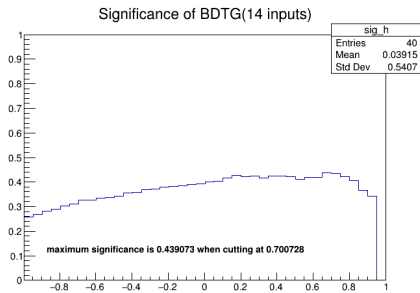
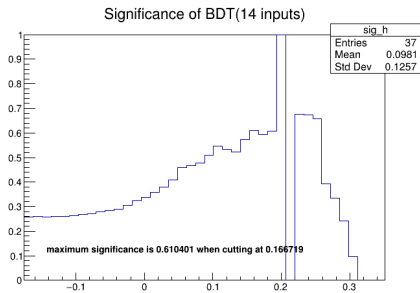
(14 input variables)



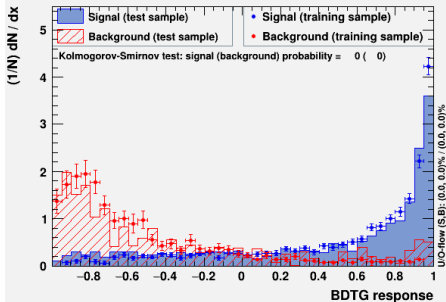
Correlation Matrix (background)

(14 input variables)

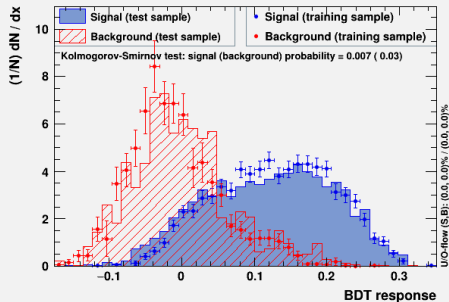




TMVA overtraining check for classifier: BDTG(14 inputs)

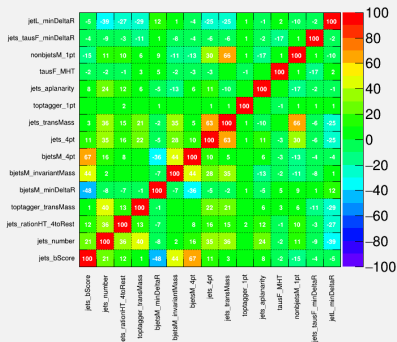


TMVA overtraining check for classifier: BDT(14 inputs)



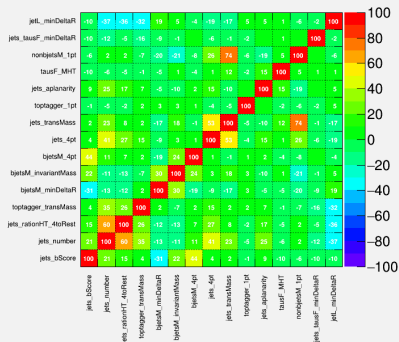
Correlation Matrix (signal)

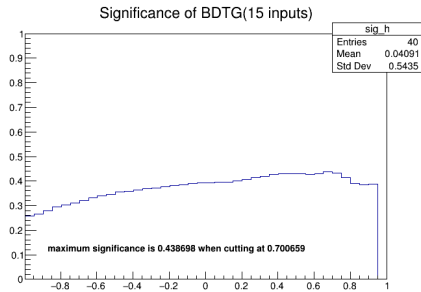
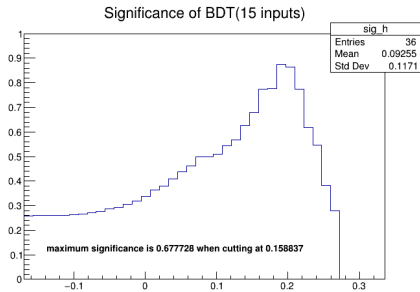
(15 input variables)



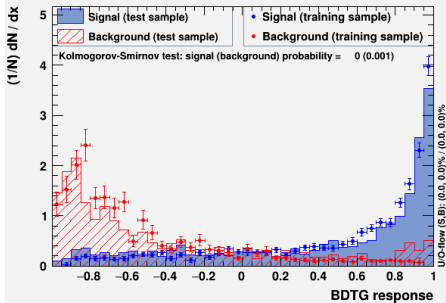
Correlation Matrix (background)

(15 input variables)

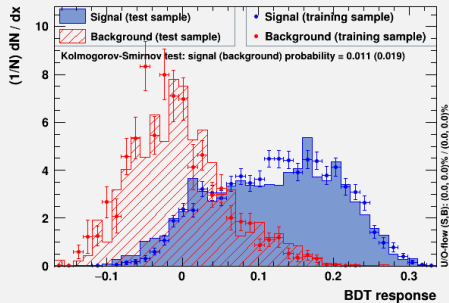




TMVA overtraining check for classifier: BDTG(15 inputs)

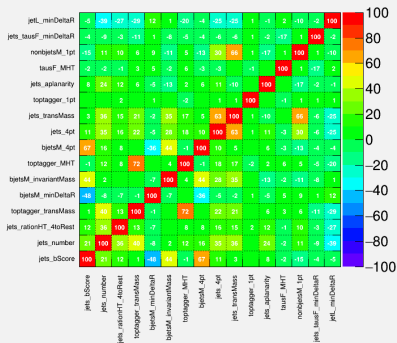


TMVA overtraining check for classifier: BDT(15 inputs)



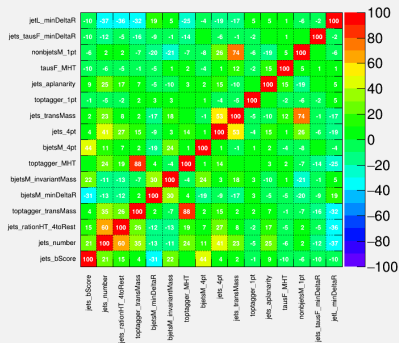
Correlation Matrix (signal)

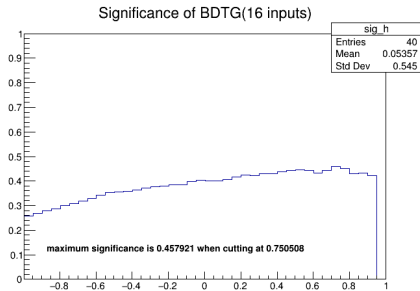
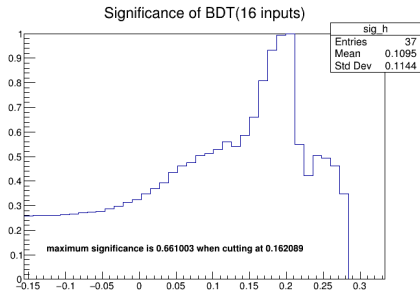
(16 input variables)



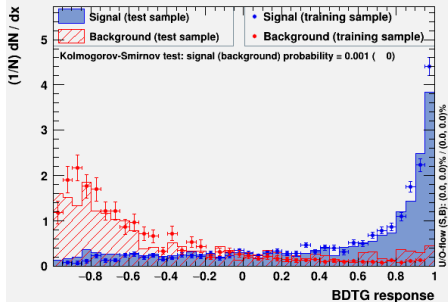
Correlation Matrix (background)

(16 input variables)

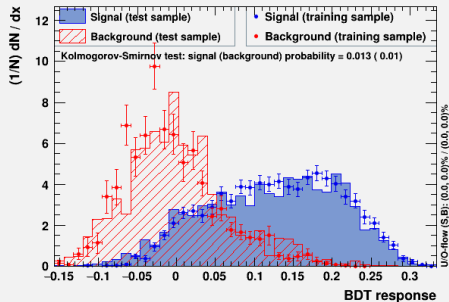




TMVA overtraining check for classifier: BDTG(16 inputs)

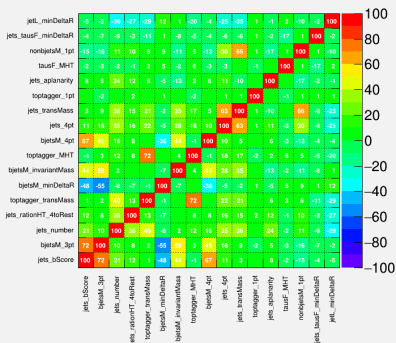


TMVA overtraining check for classifier: BDT(16 inputs)



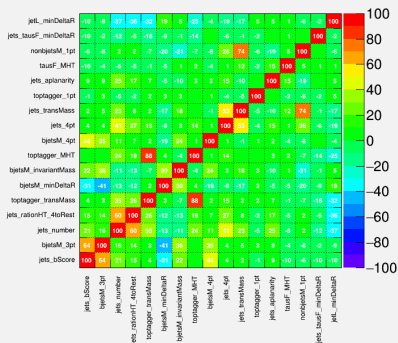
Correlation Matrix (signal)

(17 input variables)

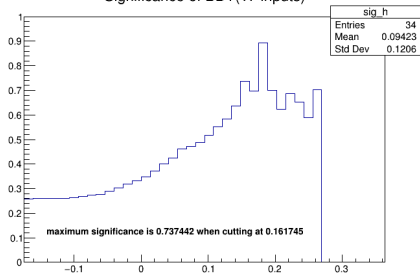


Correlation Matrix (background)

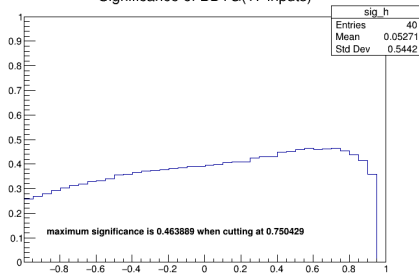
(17 input variables)



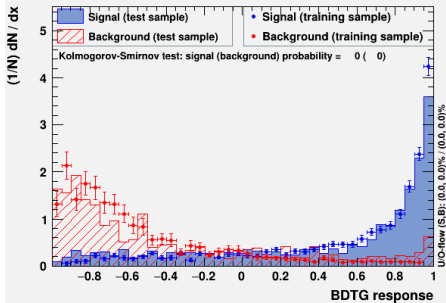
Significance of BDT(17 inputs)



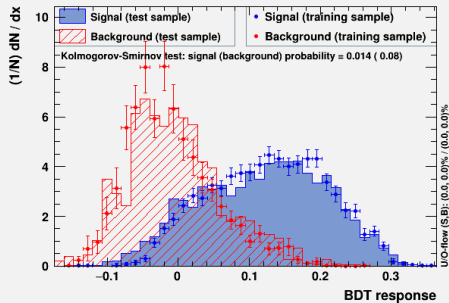
Significance of BDTG(17 inputs)



TMVA overtraining check for classifier: BDTG(17 inputs)

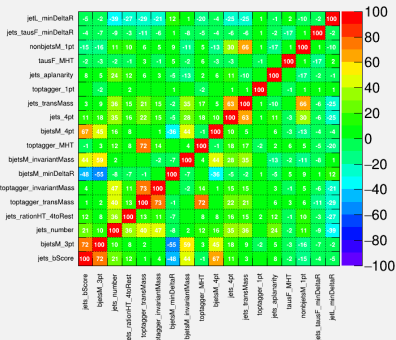


TMVA overtraining check for classifier: BDT(17 inputs)



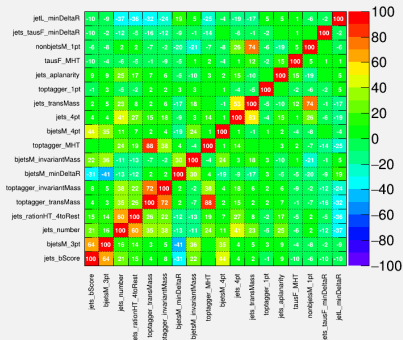
Correlation Matrix (signal)

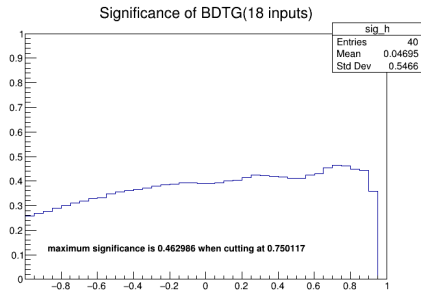
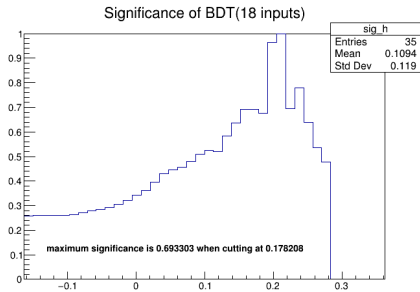
(18 input variables)



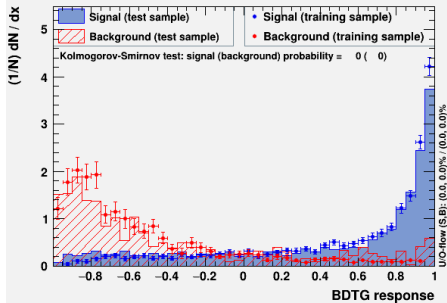
Correlation Matrix (background)

(18 input variables)

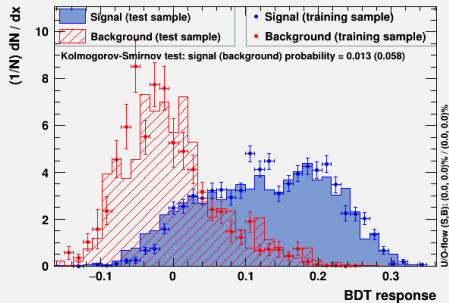




TMVA overtraining check for classifier: BDTG(18 inputs)

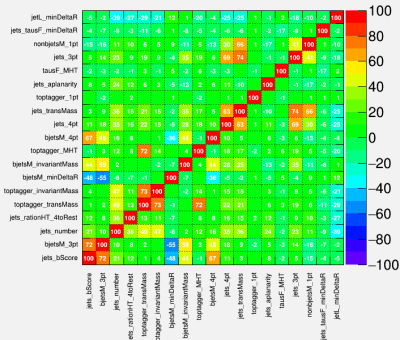


TMVA overtraining check for classifier: BDT(18 inputs)



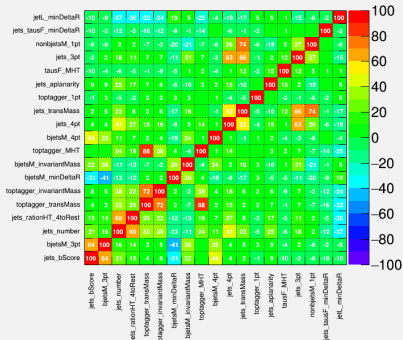
Correlation Matrix (signal)

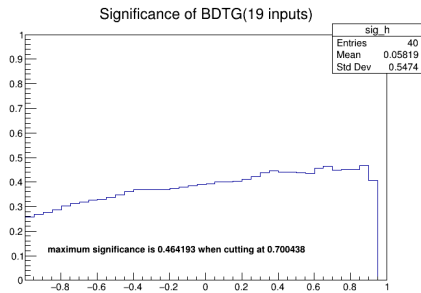
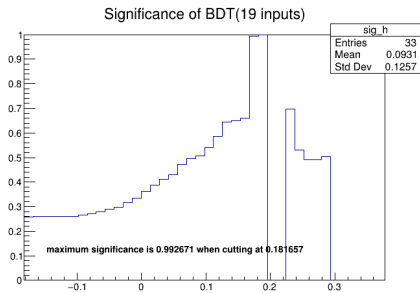
(19 input variables)



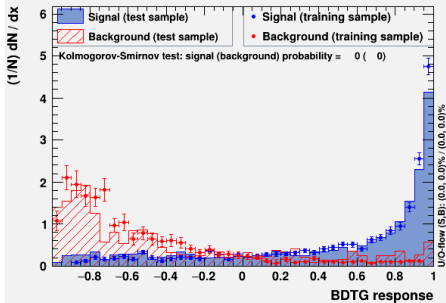
Correlation Matrix (background)

(19 input variables)

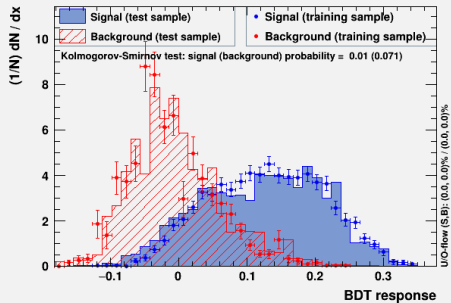




TMVA overtraining check for classifier: BDTG(19 inputs)

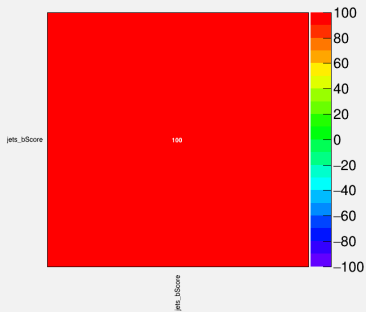


TMVA overtraining check for classifier: BDT(19 inputs)



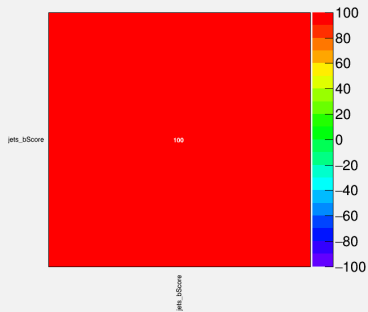
Correlation Matrix (signal)

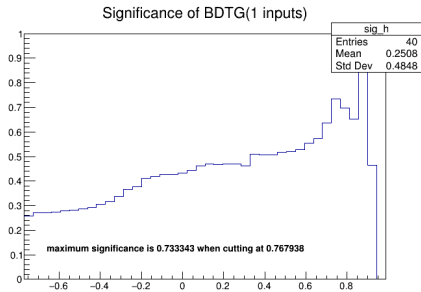
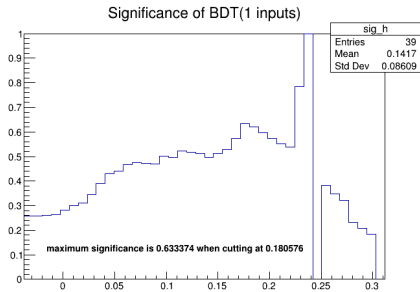
(1 input variables)



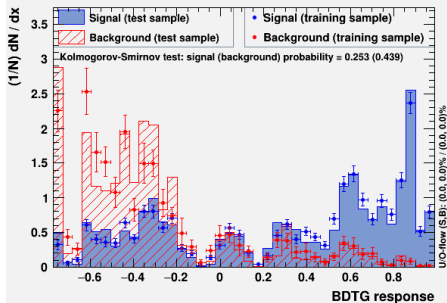
Correlation Matrix (background)

(1 input variables)

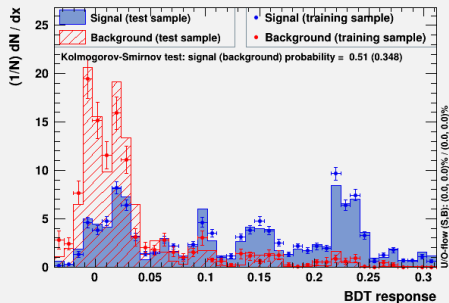




TMVA overtraining check for classifier: BDTG(1 inputs)

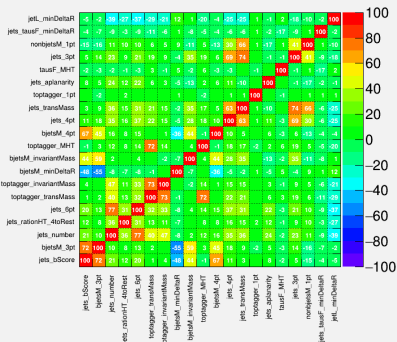


TMVA overtraining check for classifier: BDT(1 inputs)



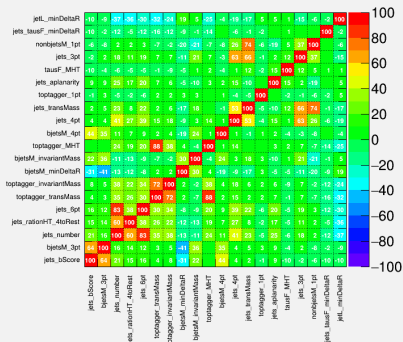
Correlation Matrix (signal)

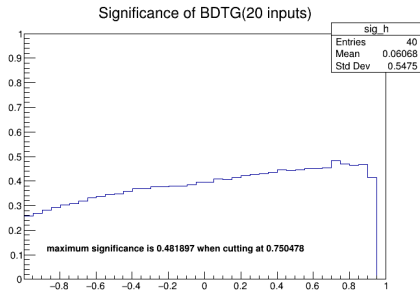
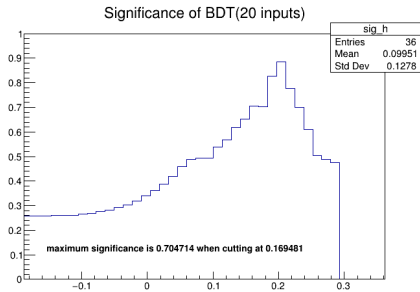
(20 input variables)



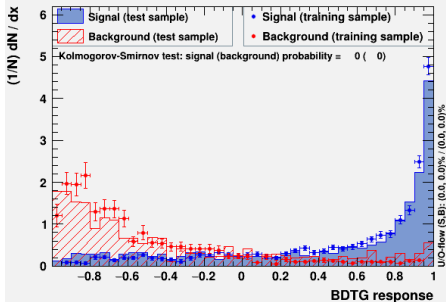
Correlation Matrix (background)

(20 input variables)

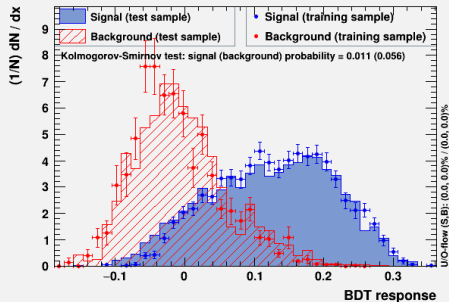




TMVA overtraining check for classifier: BDTG(20 inputs)

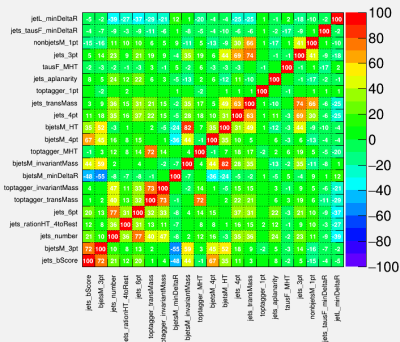


TMVA overtraining check for classifier: BDT(20 inputs)



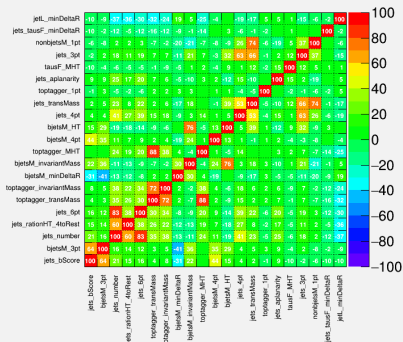
Correlation Matrix (signal)

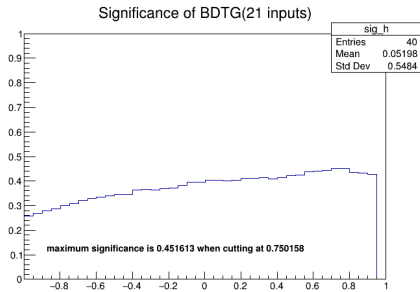
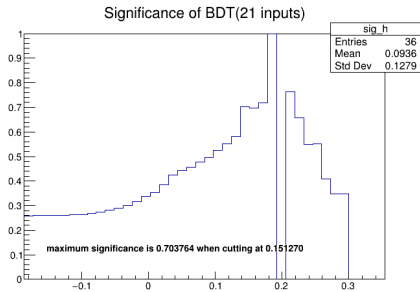
(21 input variables)



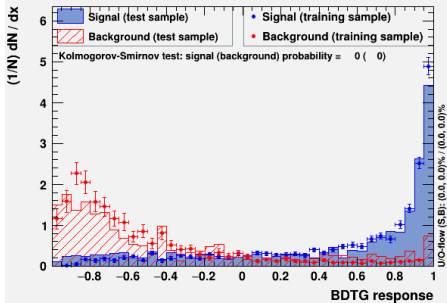
Correlation Matrix (background)

(21 input variables)

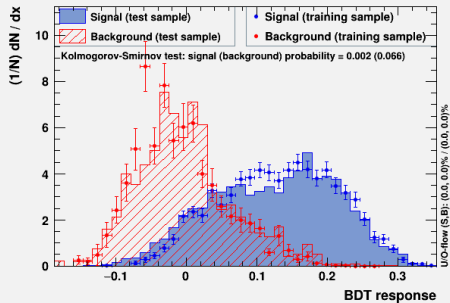




TMVA overtraining check for classifier: BDTG(21 inputs)

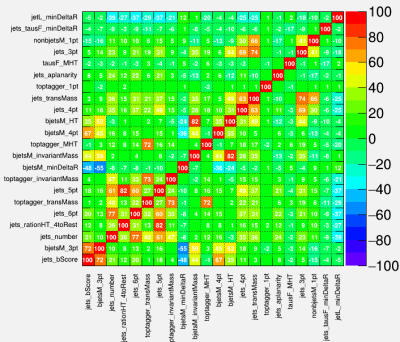


TMVA overtraining check for classifier: BDT(21 inputs)



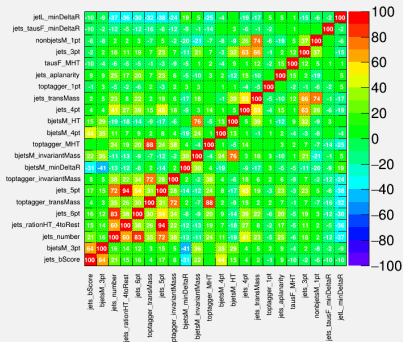
Correlation Matrix (signal)

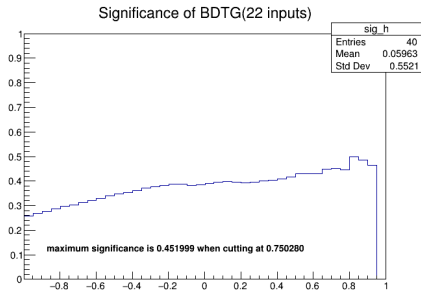
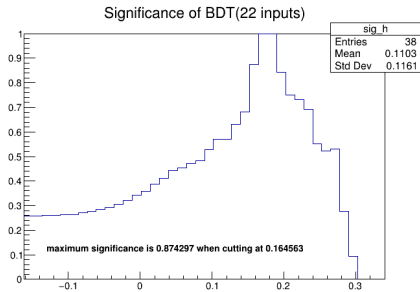
(22 input variables)



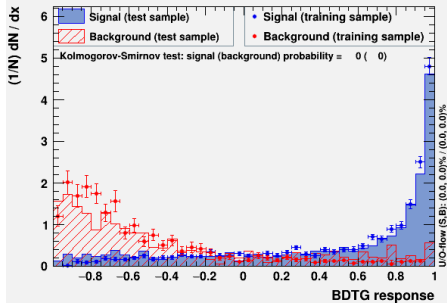
Correlation Matrix (background)

(22 input variables)

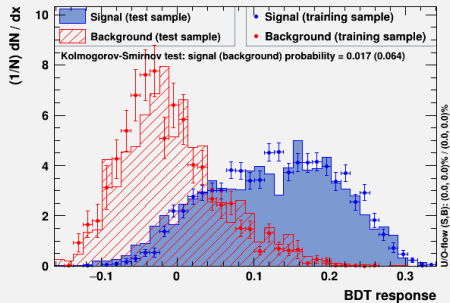




TMVA overtraining check for classifier: BDTG(22 inputs)

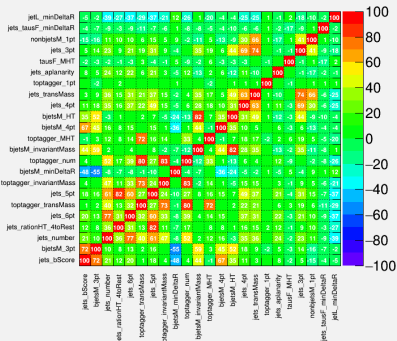


TMVA overtraining check for classifier: BDT(22 inputs)



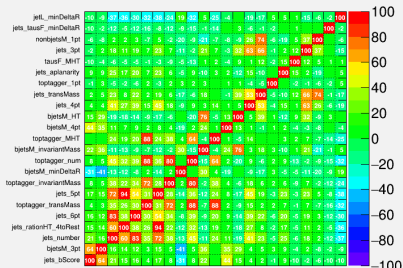
Correlation Matrix (signal)

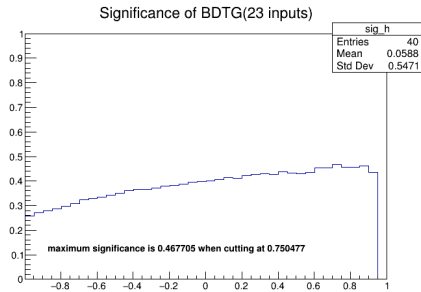
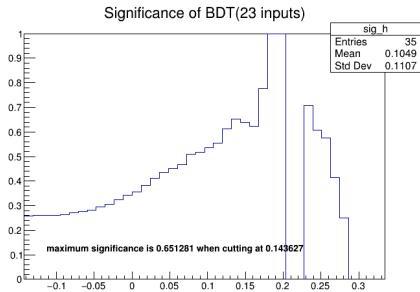
(23 input variables)



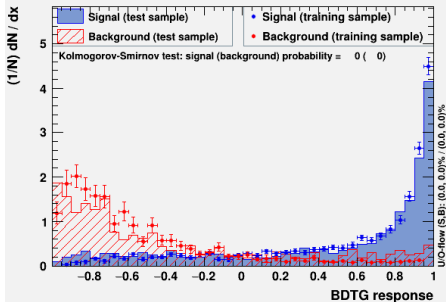
Correlation Matrix (background)

(23 input variables)

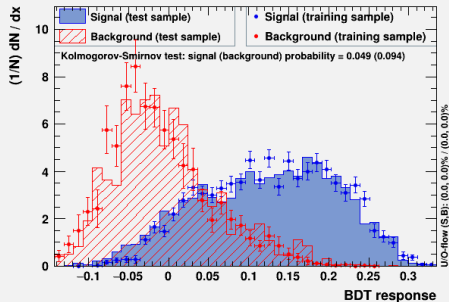




TMVA overtraining check for classifier: BDTG(23 inputs)

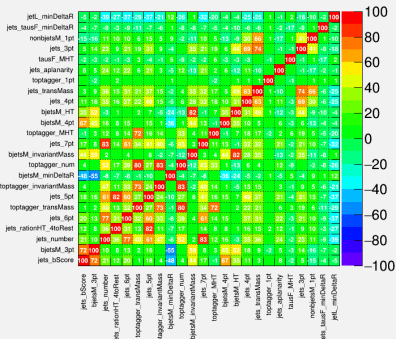


TMVA overtraining check for classifier: BDT(23 inputs)



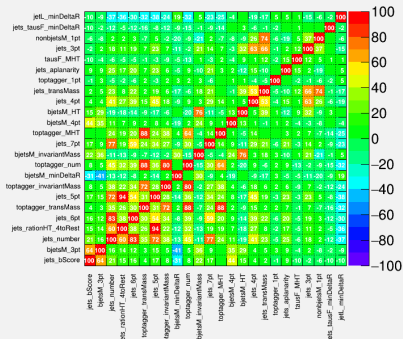
Correlation Matrix (signal)

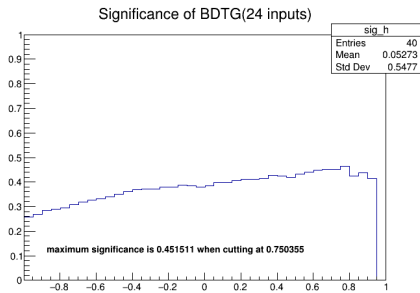
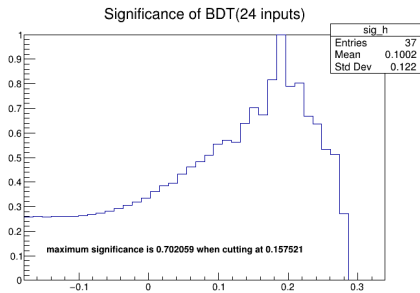
(24 input variables)



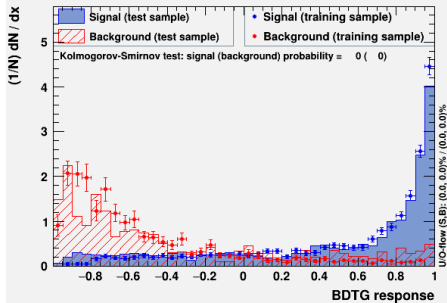
Correlation Matrix (background)

(24 input variables)

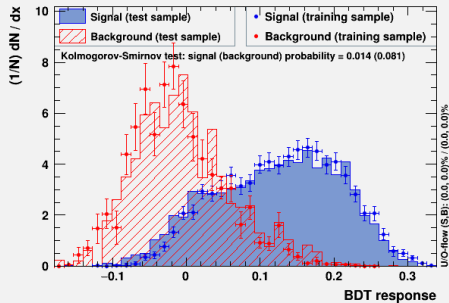




TMVA overtraining check for classifier: BDTG(24 inputs)

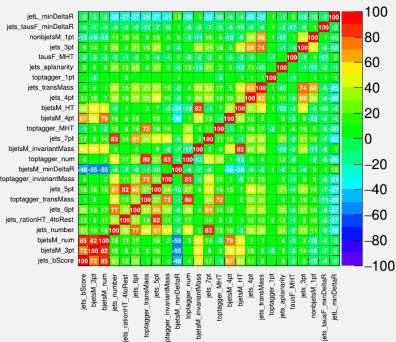


TMVA overtraining check for classifier: BDT(24 inputs)



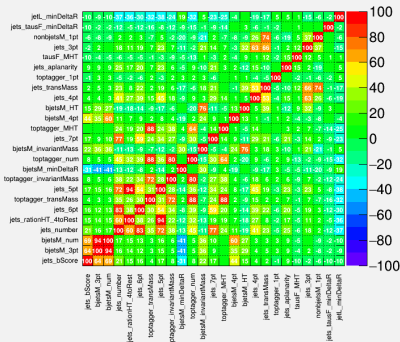
Correlation Matrix (signal)

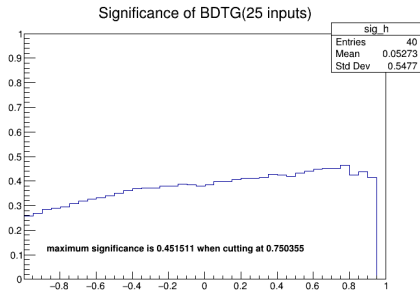
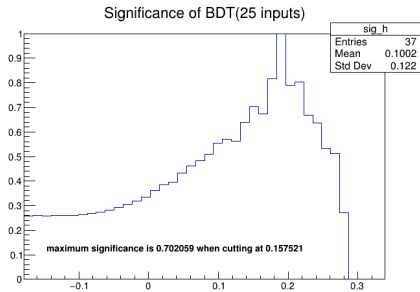
(25 input variables)



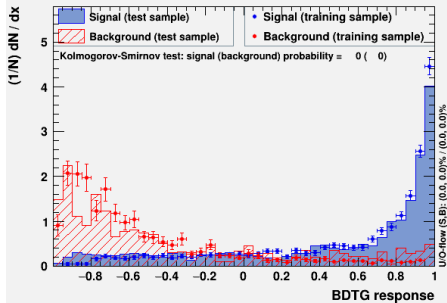
Correlation Matrix (background)

(25 input variables)

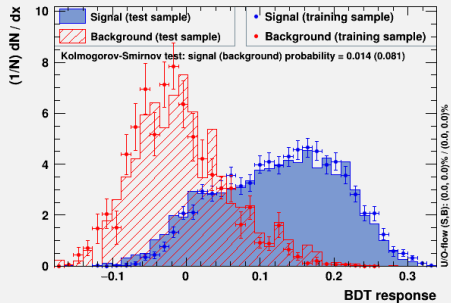




TMVA overtraining check for classifier: BDTG(25 inputs)

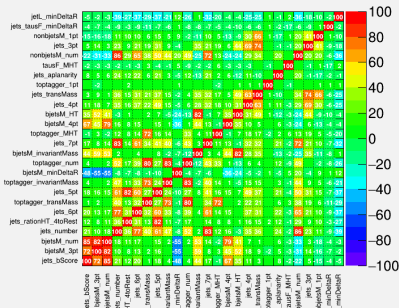


TMVA overtraining check for classifier: BDT(25 inputs)



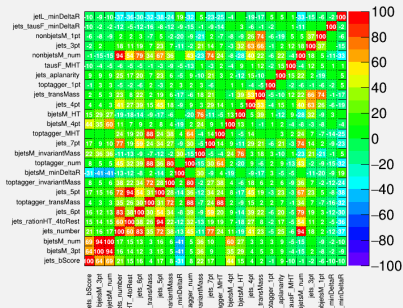
Correlation Matrix (signal)

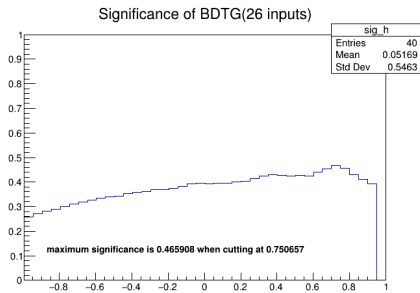
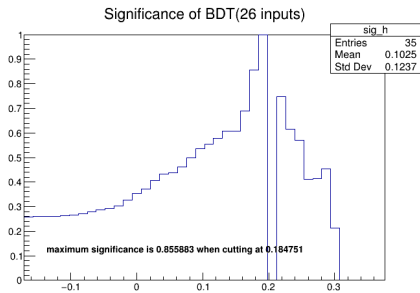
(26 input variables)



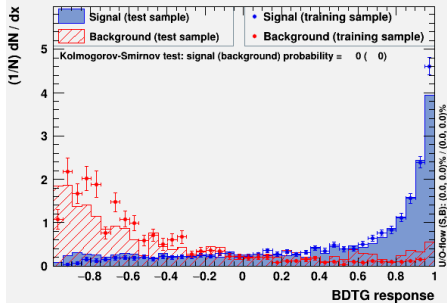
Correlation Matrix (background)

(26 input variables)

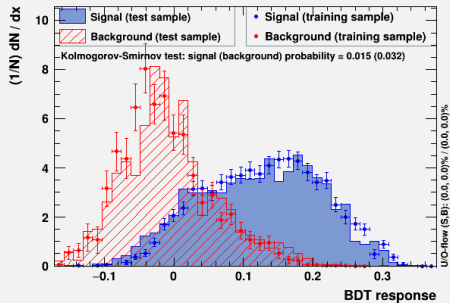


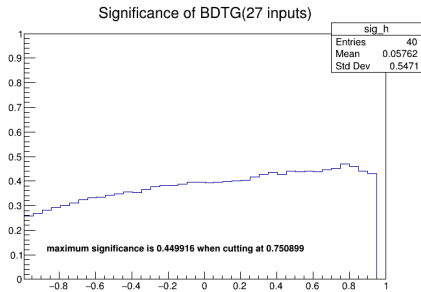
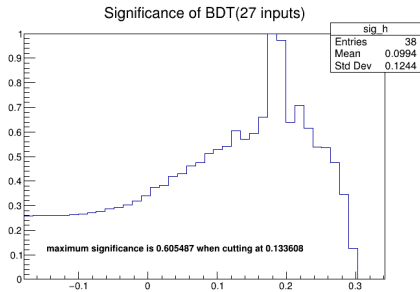


TMVA overtraining check for classifier: BDTG(26 inputs)

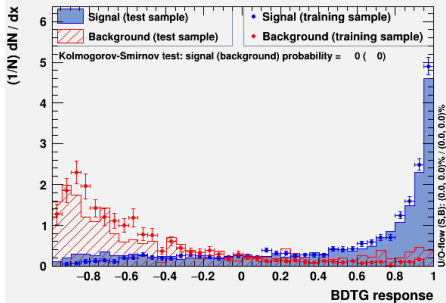


TMVA overtraining check for classifier: BDT(26 inputs)

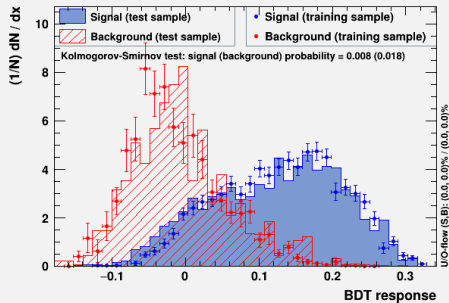




TMVA overtraining check for classifier: BDTG(27 inputs)

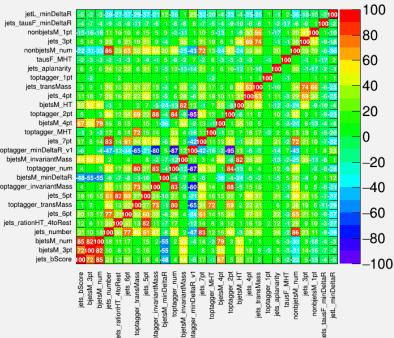


TMVA overtraining check for classifier: BDT(27 inputs)



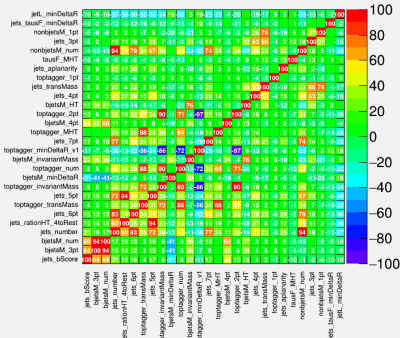
Correlation Matrix (signal)

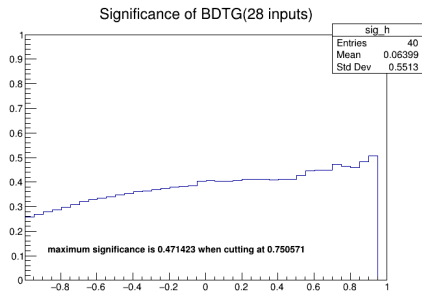
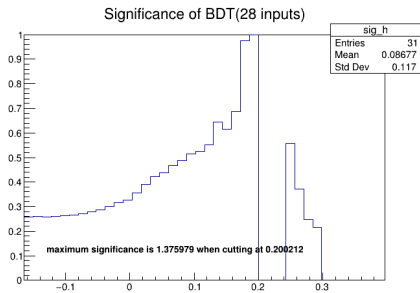
(28 input variables)



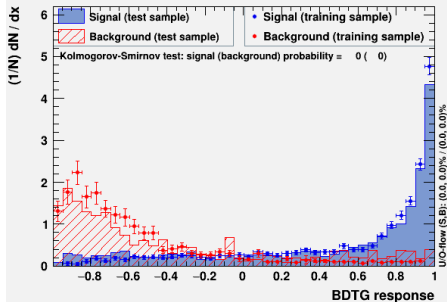
Correlation Matrix (background)

(28 input variables)

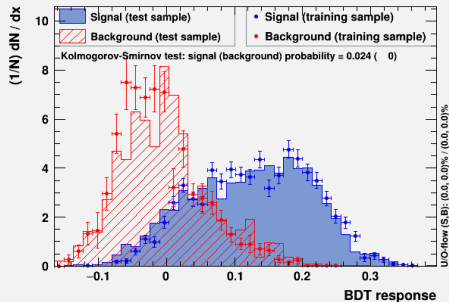




TMVA overtraining check for classifier: BDTG(28 inputs)

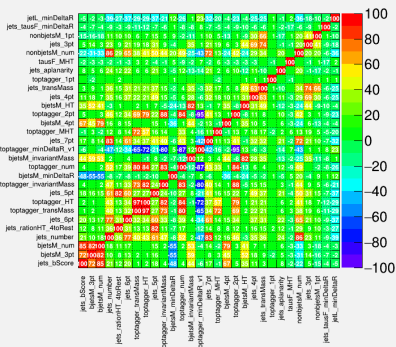


TMVA overtraining check for classifier: BDT(28 inputs)



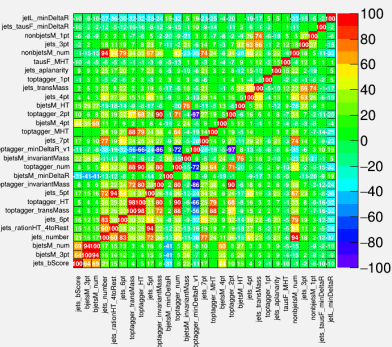
Correlation Matrix (signal)

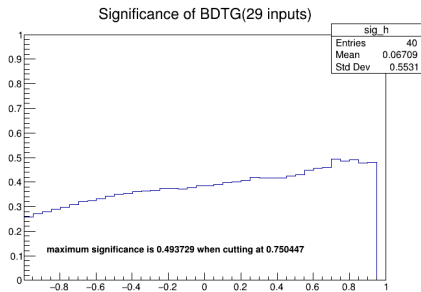
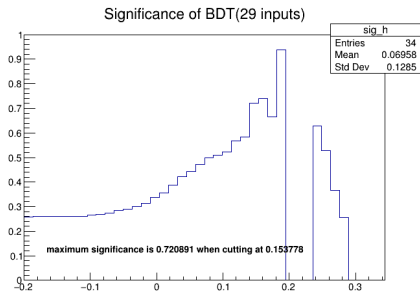
(29 input variables)



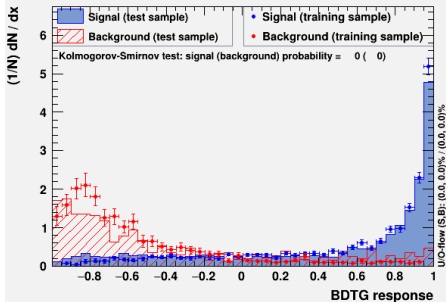
Correlation Matrix (background)

(29 input variables)

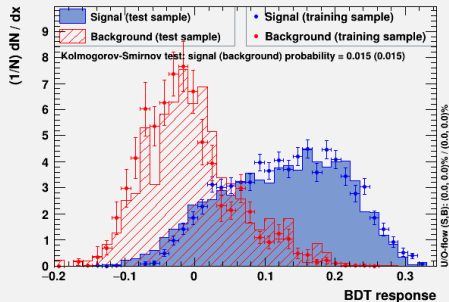




TMVA overtraining check for classifier: BDTG(29 inputs)

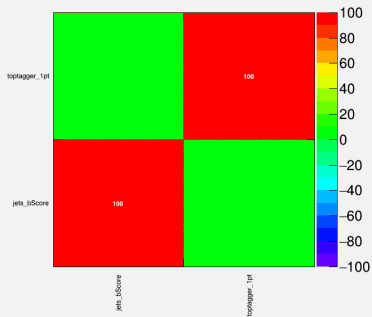


TMVA overtraining check for classifier: BDT(29 inputs)



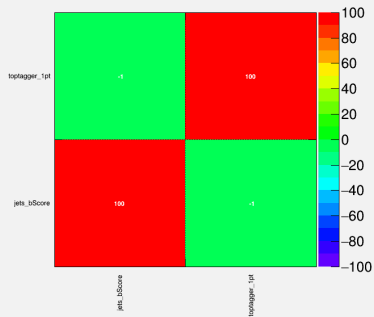
Correlation Matrix (signal)

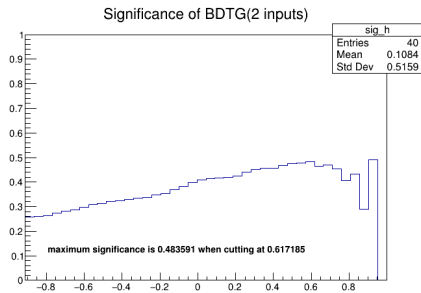
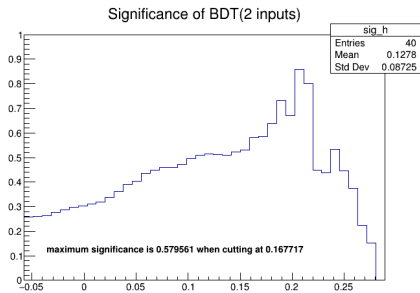
(2 input variables)



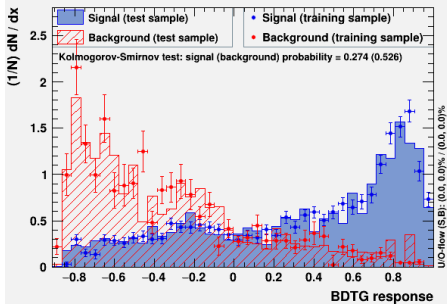
Correlation Matrix (background)

(2 input variables)

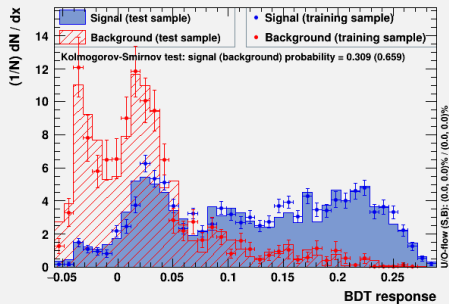


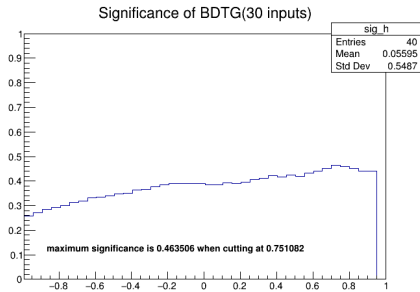
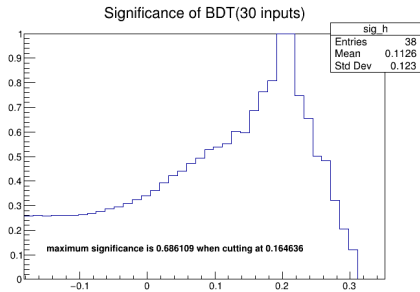


TMVA overtraining check for classifier: BDTG(2 inputs)

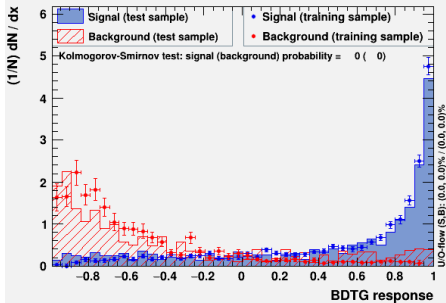


TMVA overtraining check for classifier: BDT(2 inputs)

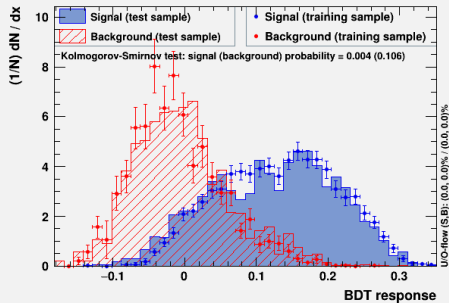




TMVA overtraining check for classifier: BDTG(30 inputs)

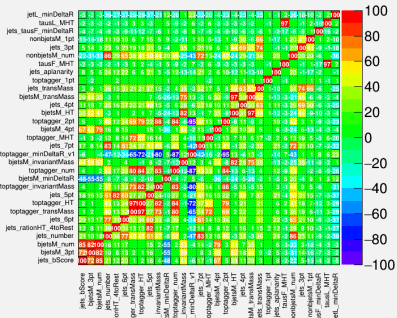


TMVA overtraining check for classifier: BDT(30 inputs)



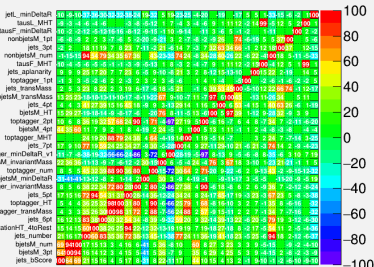
Correlation Matrix (signal)

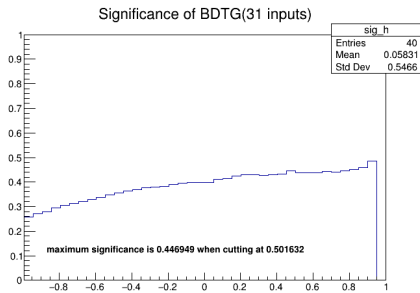
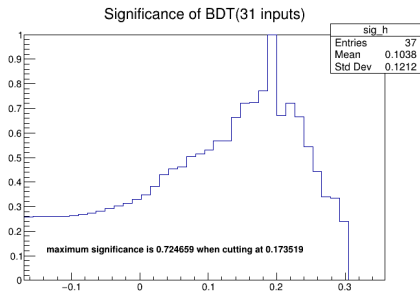
(31 input variables)



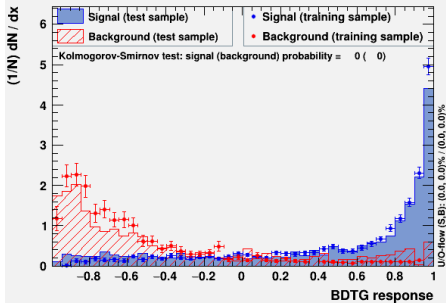
Correlation Matrix (background)

(31 input variables)

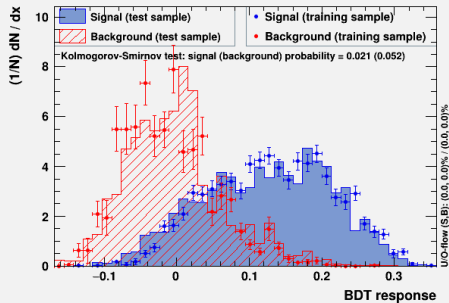




TMVA overtraining check for classifier: BDTG(31 inputs)

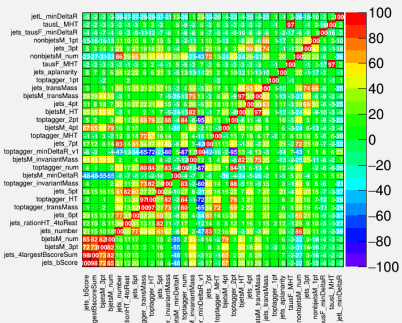


TMVA overtraining check for classifier: BDT(31 inputs)



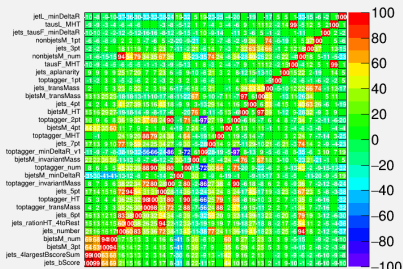
Correlation Matrix (signal)

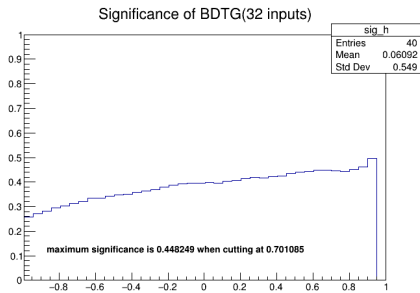
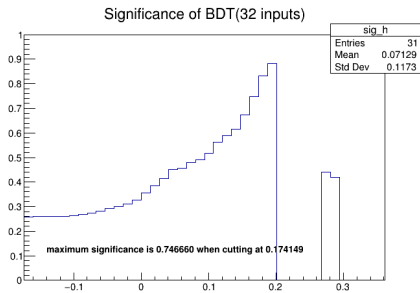
(32 input variables)



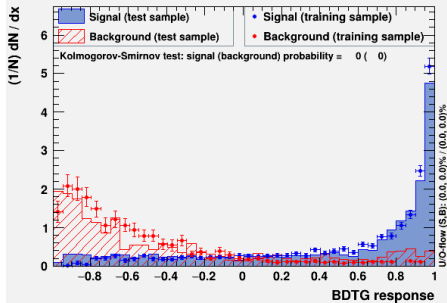
Correlation Matrix (background)

(32 input variables)

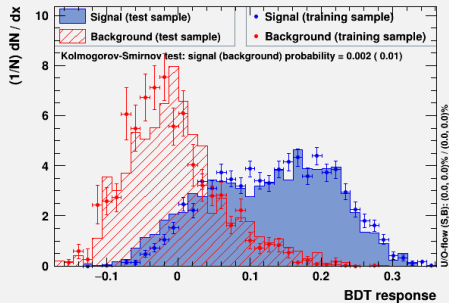




TMVA overtraining check for classifier: BDTG(32 inputs)

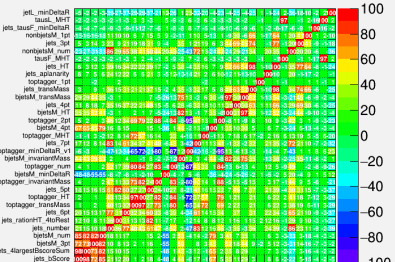


TMVA overtraining check for classifier: BDT(32 inputs)



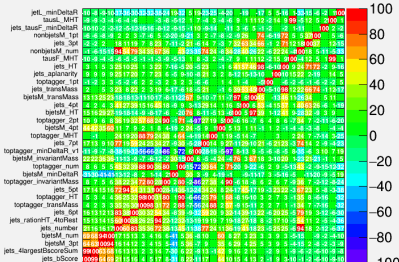
Correlation Matrix (signal)

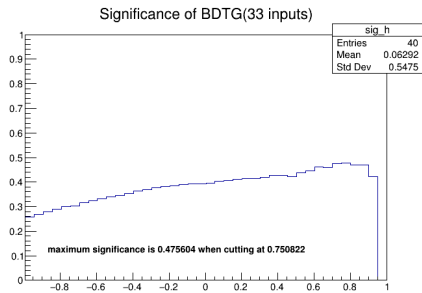
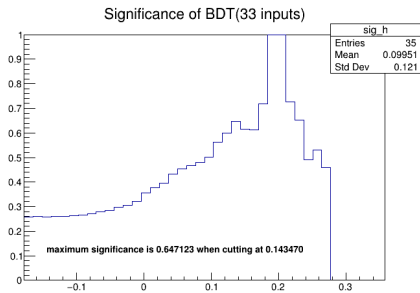
(33 input variables)



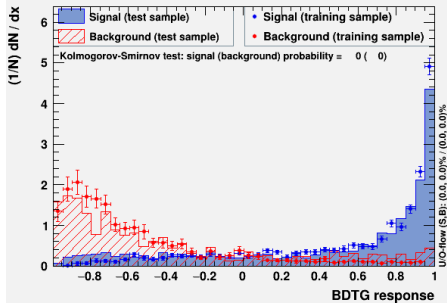
Correlation Matrix (background)

(33 input variables)

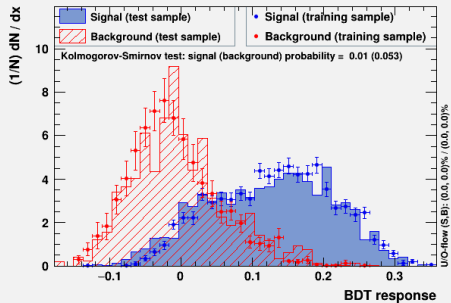




TMVA overtraining check for classifier: BDTG(33 inputs)

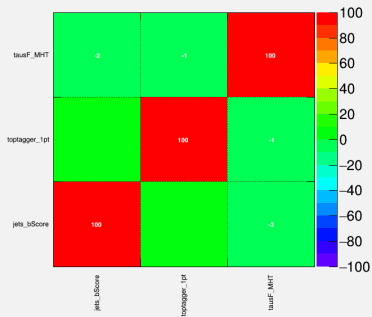


TMVA overtraining check for classifier: BDT(33 inputs)



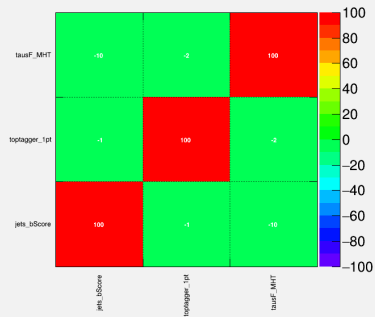
Correlation Matrix (signal)

(3 input variables)

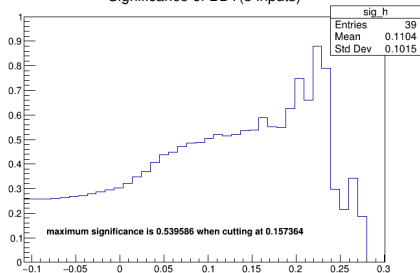


Correlation Matrix (background)

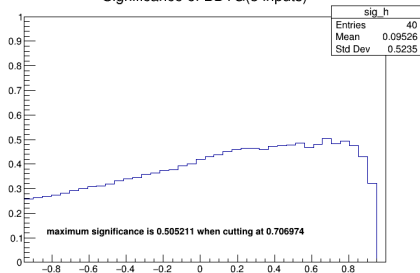
(3 input variables)



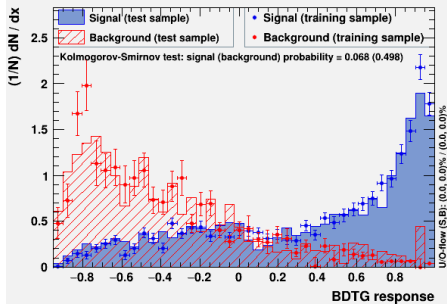
Significance of BDT(3 inputs)



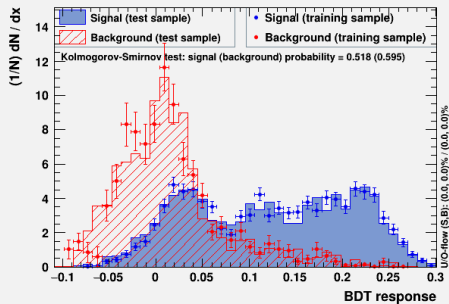
Significance of BDTG(3 inputs)



TMVA overtraining check for classifier: BDTG(3 inputs)

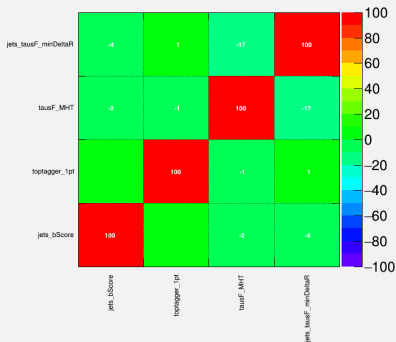


TMVA overtraining check for classifier: BDT(3 inputs)



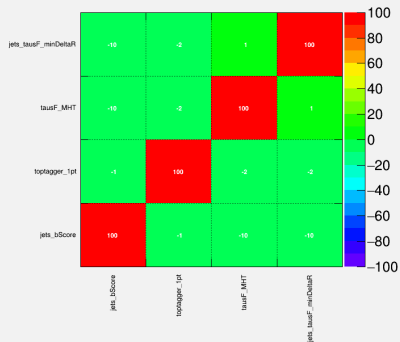
Correlation Matrix (signal)

(4 input variables)

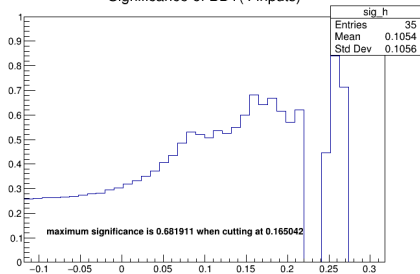


Correlation Matrix (background)

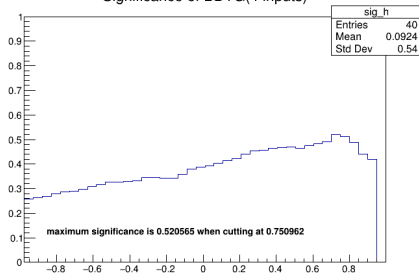
(4 input variables)



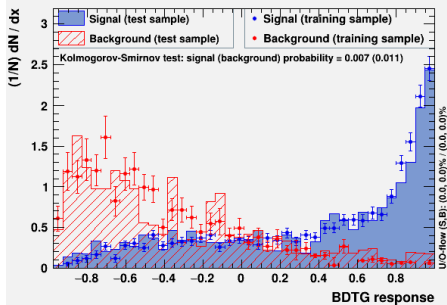
Significance of BDT(4 inputs)



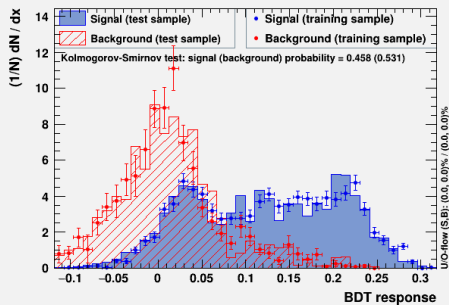
Significance of BDTG(4 inputs)

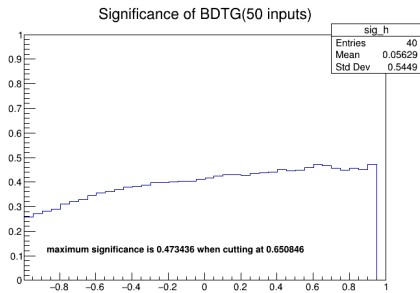
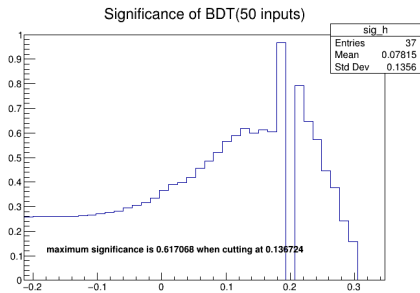


TMVA overtraining check for classifier: BDTG(4 inputs)

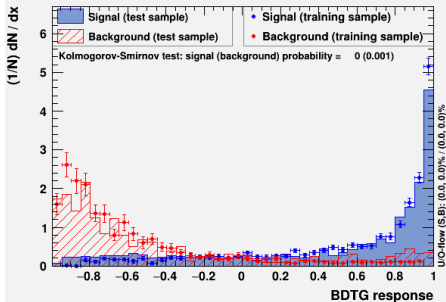


TMVA overtraining check for classifier: BDT(4 inputs)

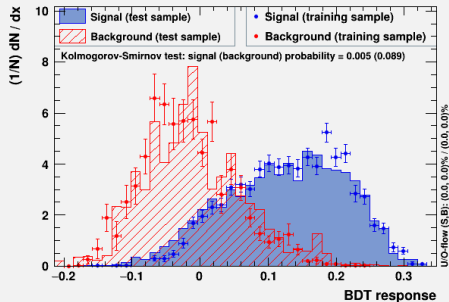




TMVA overtraining check for classifier: BDTG(50 inputs)

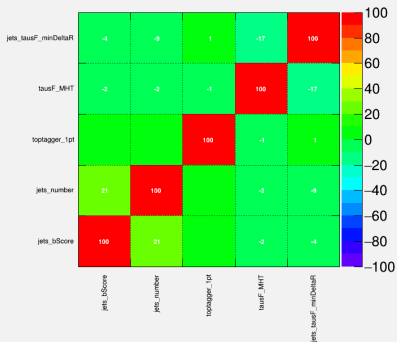


TMVA overtraining check for classifier: BDT(50 inputs)



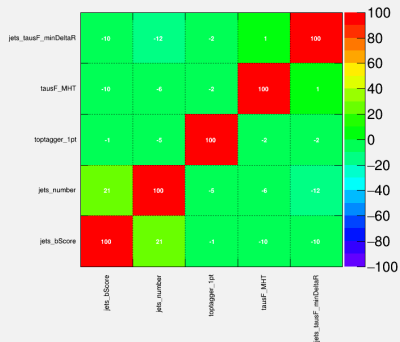
Correlation Matrix (signal)

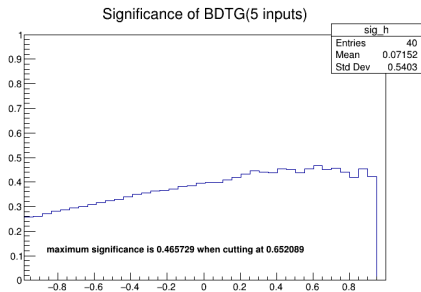
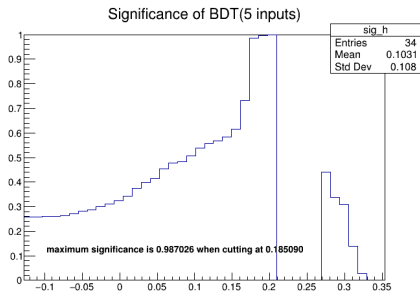
(5 input variables)



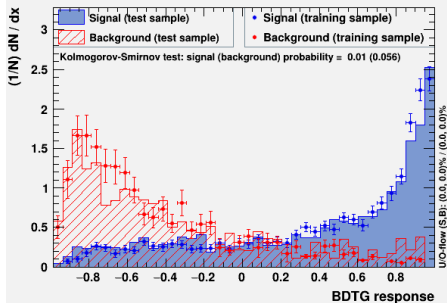
Correlation Matrix (background)

(5 input variables)

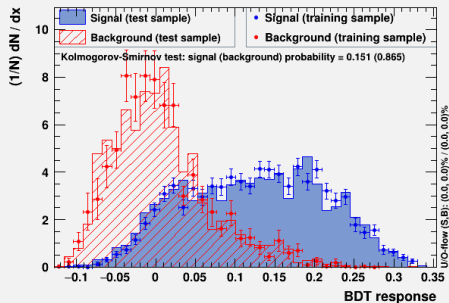




TMVA overtraining check for classifier: BDTG(5 inputs)

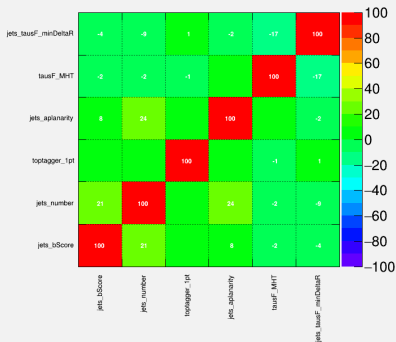


TMVA overtraining check for classifier: BDT(5 inputs)



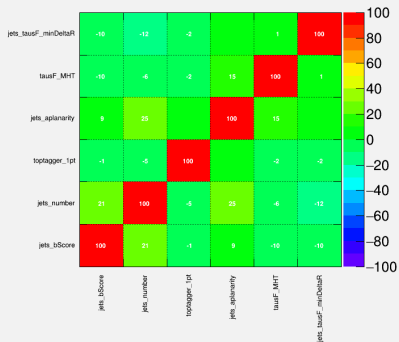
Correlation Matrix (signal)

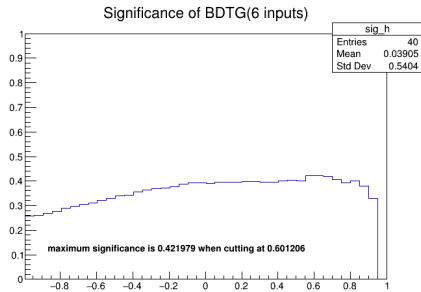
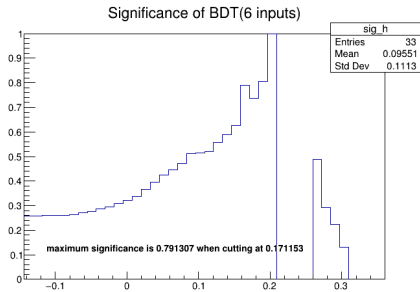
(6 input variables)



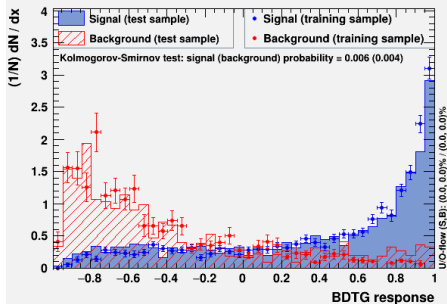
Correlation Matrix (background)

(6 input variables)

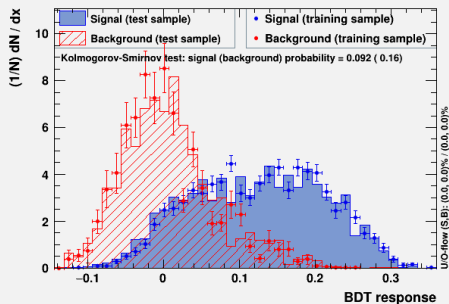




TMVA overtraining check for classifier: BDTG(6 inputs)

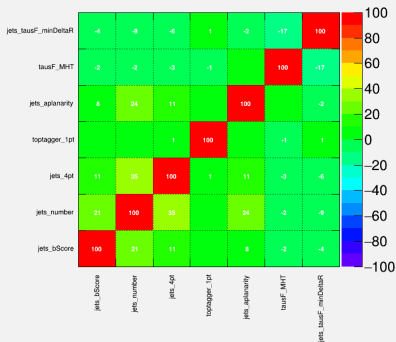


TMVA overtraining check for classifier: BDT(6 inputs)



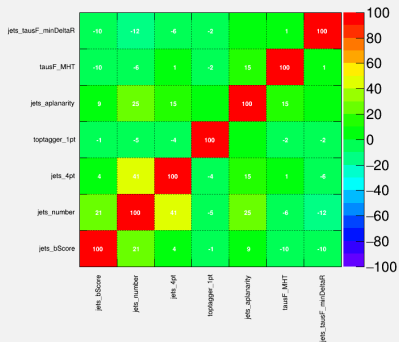
Correlation Matrix (signal)

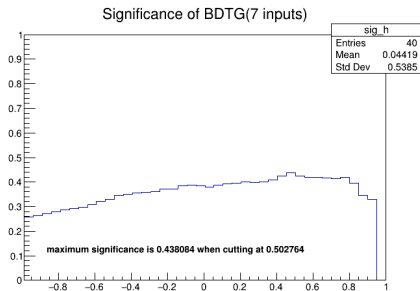
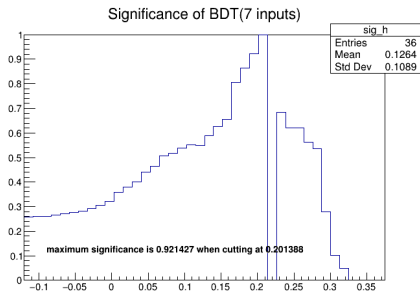
(7 input variables)



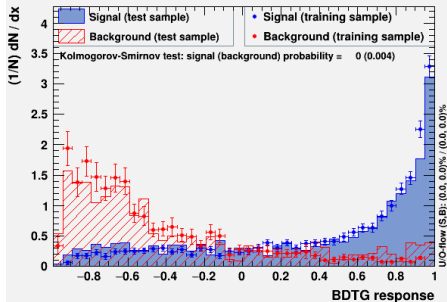
Correlation Matrix (background)

(7 input variables)

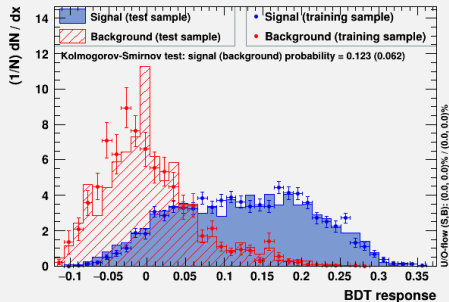




TMVA overtraining check for classifier: BDTG(7 inputs)

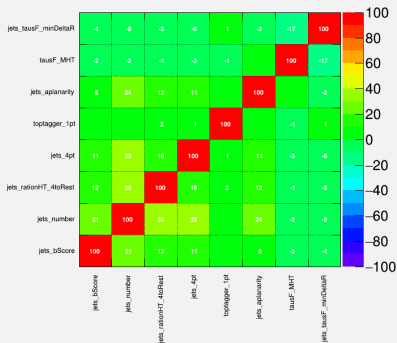


TMVA overtraining check for classifier: BDT(7 inputs)



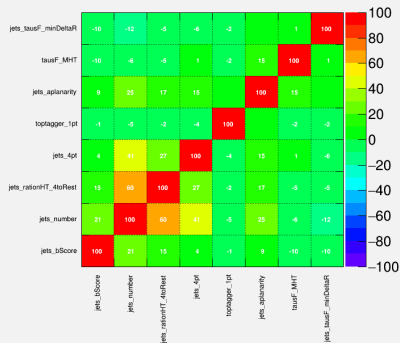
Correlation Matrix (signal)

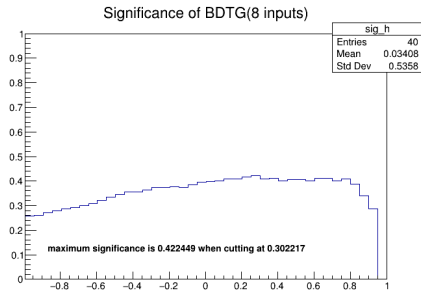
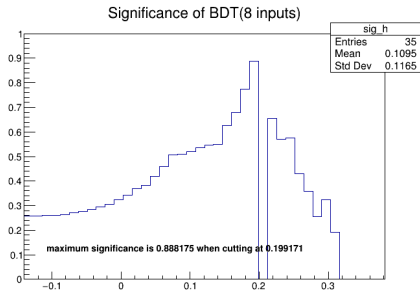
(8 input variables)



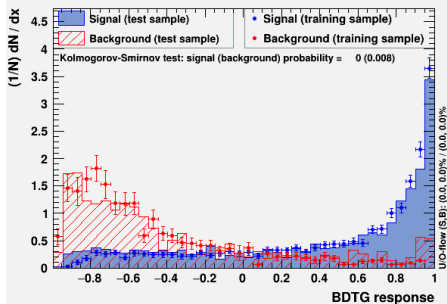
Correlation Matrix (background)

(8 input variables)

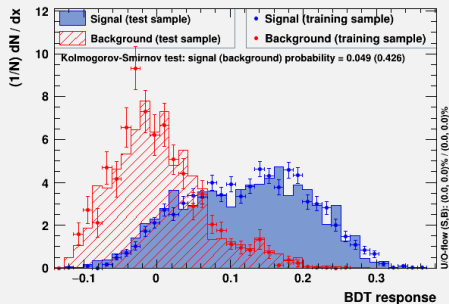




TMVA overtraining check for classifier: BDTG(8 inputs)

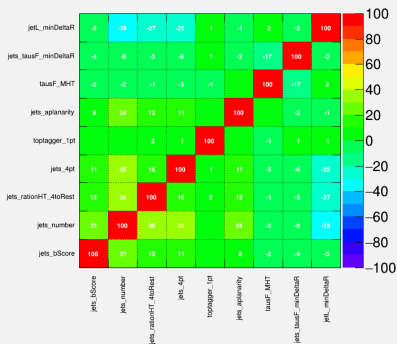


TMVA overtraining check for classifier: BDT(8 inputs)



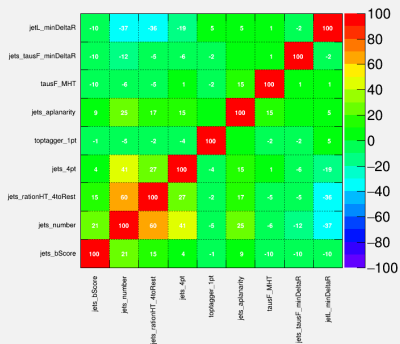
Correlation Matrix (signal)

(9 input variables)

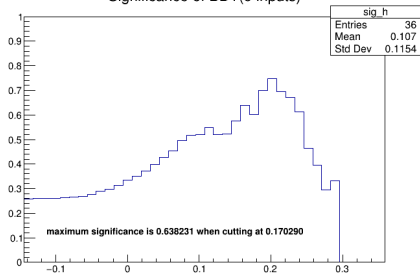


Correlation Matrix (background)

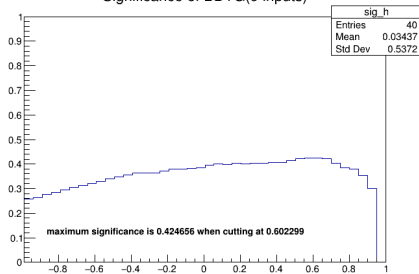
(9 input variables)



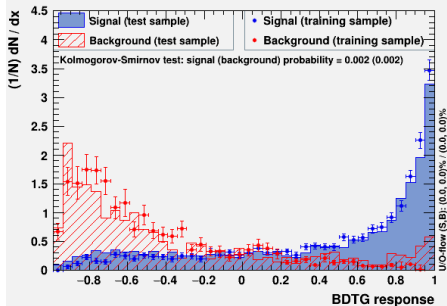
Significance of BDT(9 inputs)



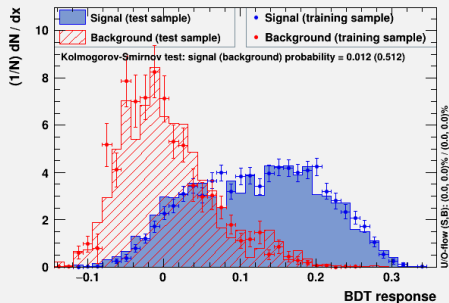
Significance of BDTG(9 inputs)



TMVA overtraining check for classifier: BDTG(9 inputs)



TMVA overtraining check for classifier: BDT(9 inputs)



Outline

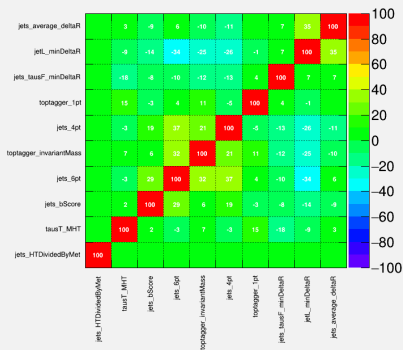
1 1tau1l

2 1tau2l

3 2tau1l

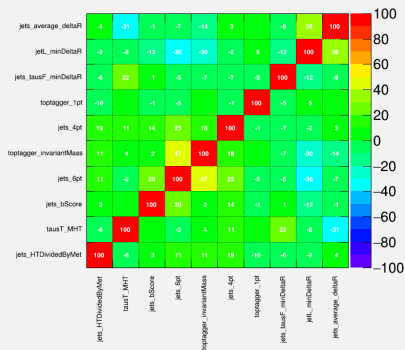
Correlation Matrix (signal)

(10 input variables)

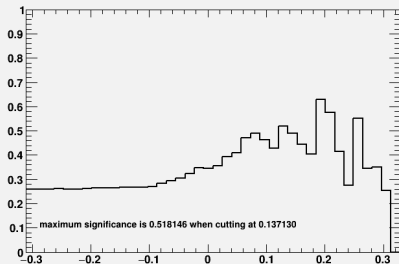


Correlation Matrix (background)

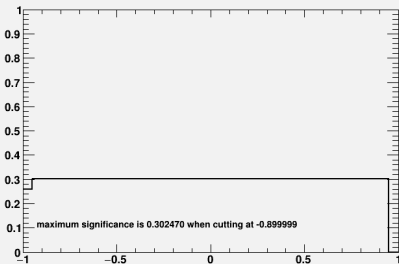
(10 input variables)



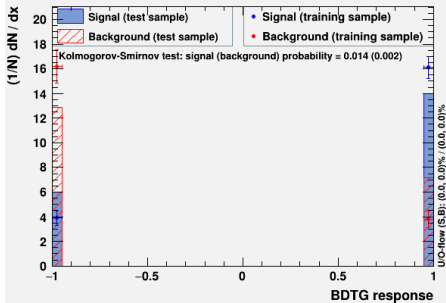
Significance of BDT(10 inputs)



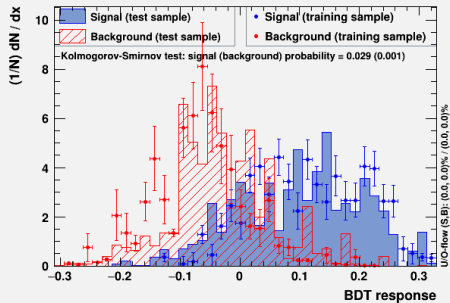
Significance of BDTG(10 inputs)



TMVA overtraining check for classifier: BDTG(10 inputs)

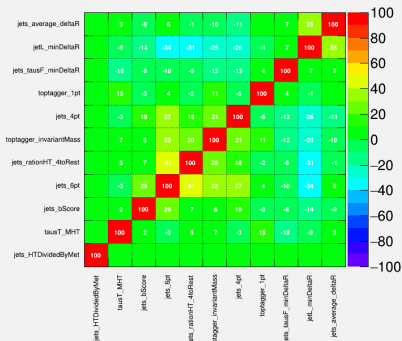


TMVA overtraining check for classifier: BDT(10 inputs)



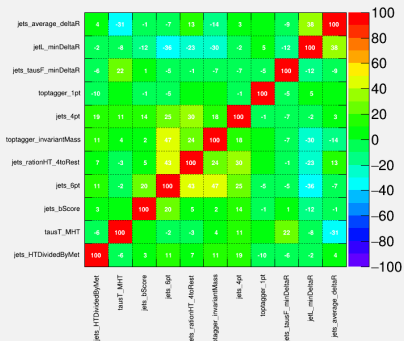
Correlation Matrix (signal)

(11 input variables)

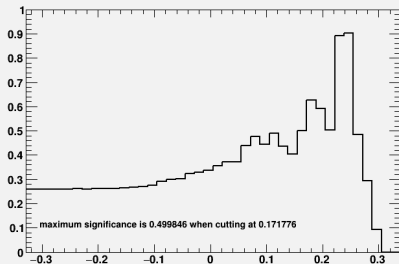


Correlation Matrix (background)

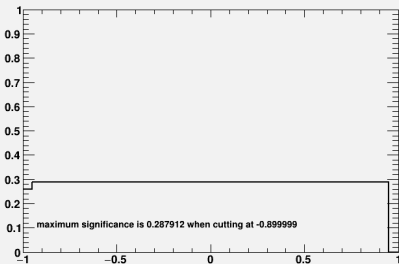
(11 input variables)



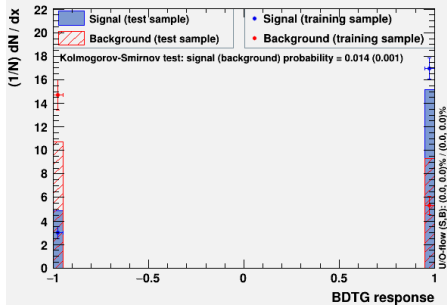
Significance of BDT(11 inputs)



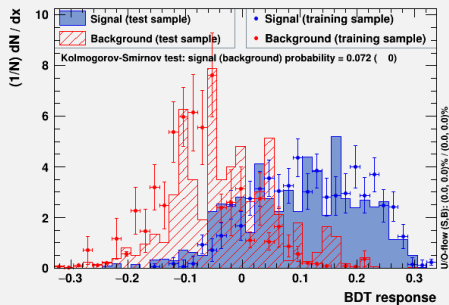
Significance of BDTG(11 inputs)



TMVA overtraining check for classifier: BDTG(11 inputs)

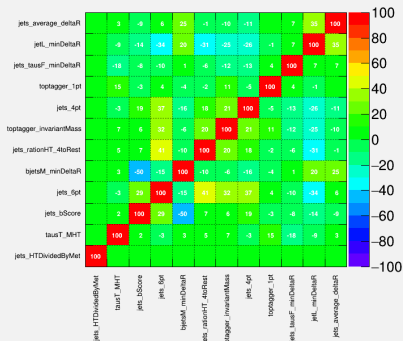


TMVA overtraining check for classifier: BDT(11 inputs)



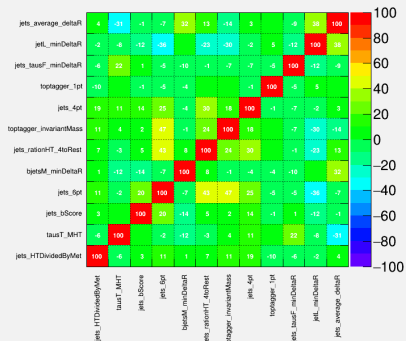
Correlation Matrix (signal)

(12 input variables)

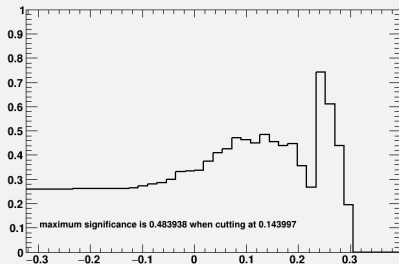


Correlation Matrix (background)

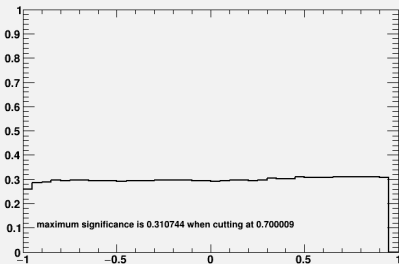
(12 input variables)



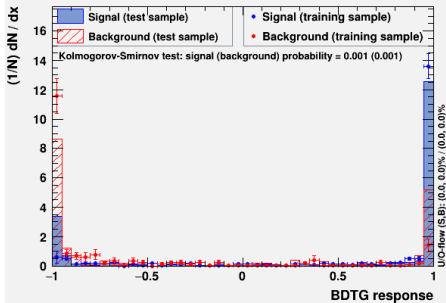
Significance of BDT(12 inputs)



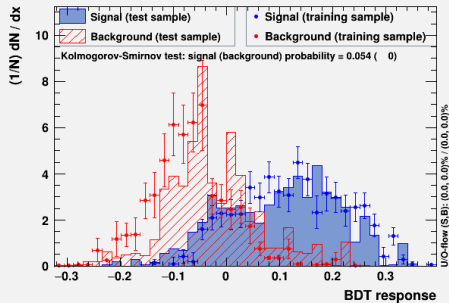
Significance of BDTG(12 inputs)



TMVA overtraining check for classifier: BDTG(12 inputs)

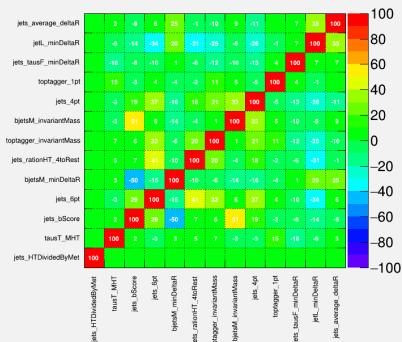


TMVA overtraining check for classifier: BDT(12 inputs)



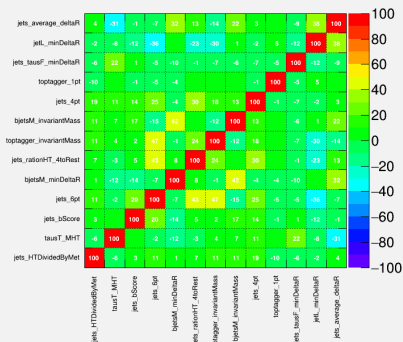
Correlation Matrix (signal)

(13 input variables)

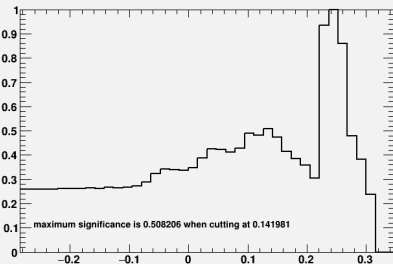


Correlation Matrix (background)

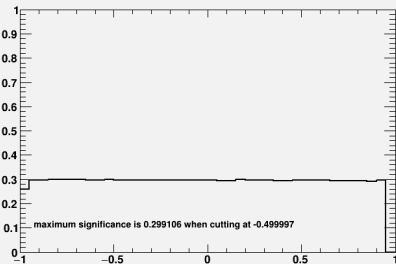
(13 input variables)



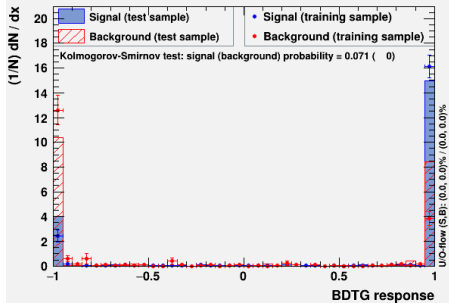
Significance of BDT(13 inputs)



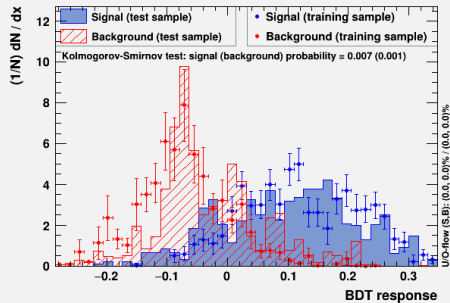
Significance of BDTG(13 inputs)



TMVA overtraining check for classifier: BDTG(13 inputs)

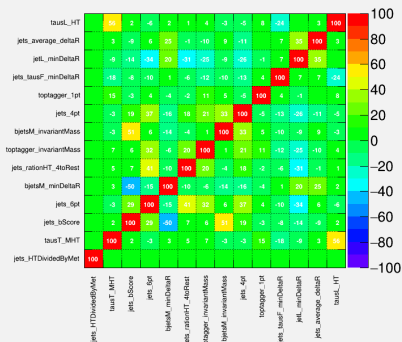


TMVA overtraining check for classifier: BDT(13 inputs)



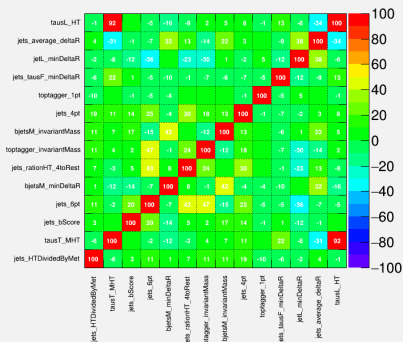
Correlation Matrix (signal)

(14 input variables)

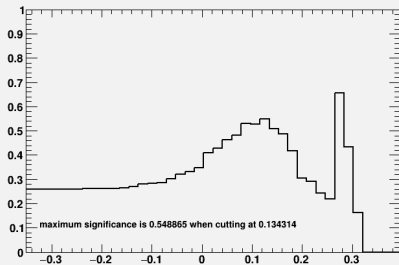


Correlation Matrix (background)

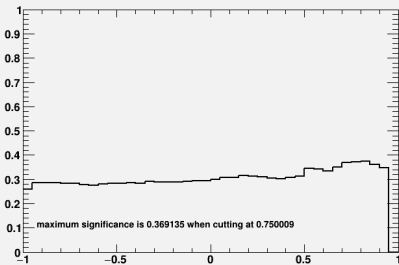
(14 input variables)



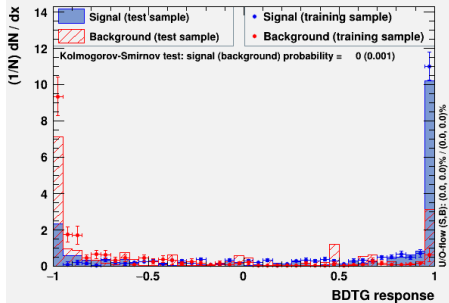
Significance of BDT(14 inputs)



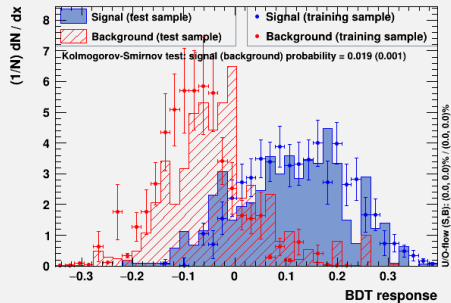
Significance of BDTG(14 inputs)



TMVA overtraining check for classifier: BDTG(14 inputs)

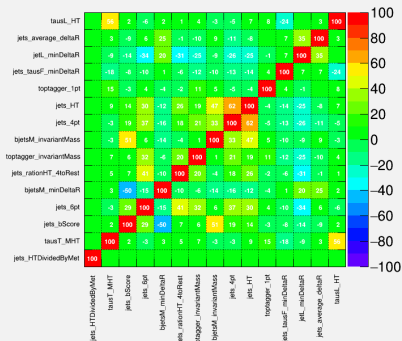


TMVA overtraining check for classifier: BDT(14 inputs)



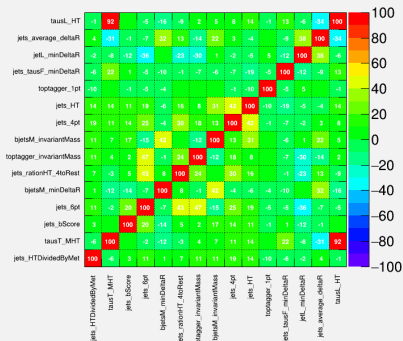
Correlation Matrix (signal)

(15 input variables)

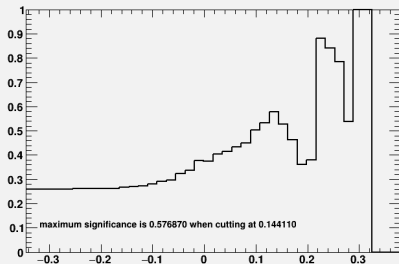


Correlation Matrix (background)

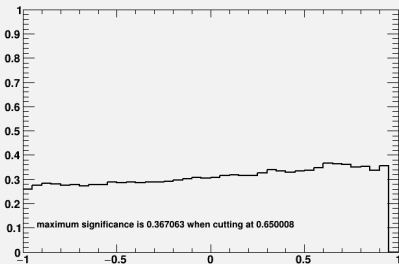
(15 input variables)



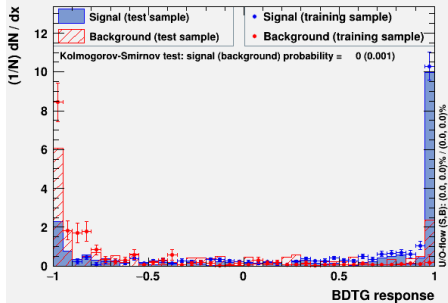
Significance of BDT(15 inputs)



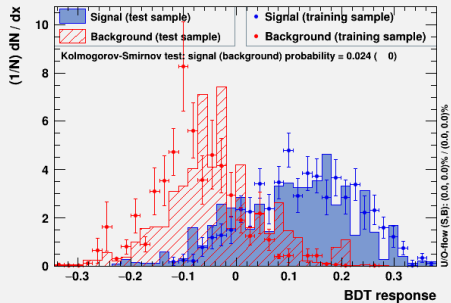
Significance of BDTG(15 inputs)



TMVA overtraining check for classifier: BDTG(15 inputs)

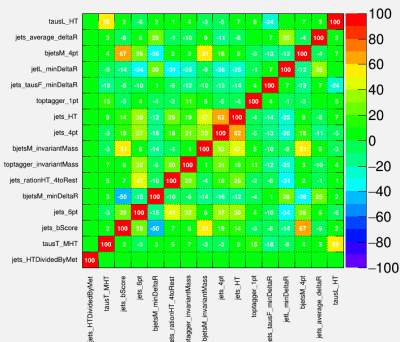


TMVA overtraining check for classifier: BDT(15 inputs)



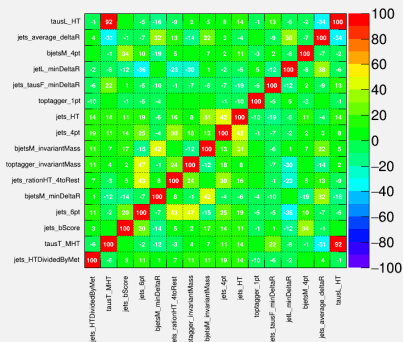
Correlation Matrix (signal)

(16 input variables)

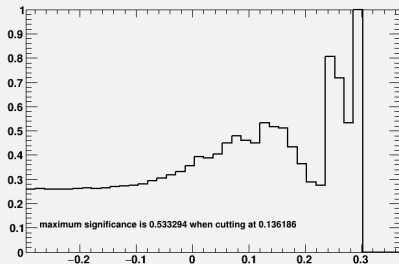


Correlation Matrix (background)

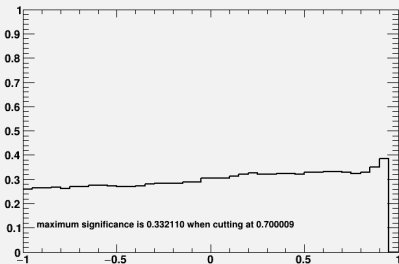
(16 input variables)



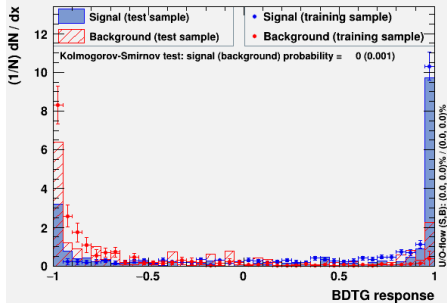
Significance of BDT(16 inputs)



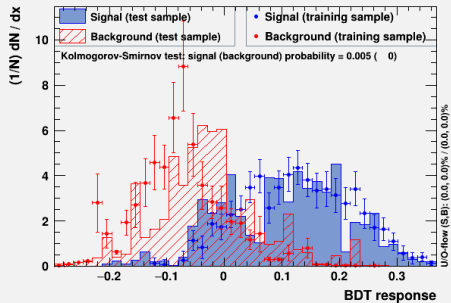
Significance of BDTG(16 inputs)



TMVA overtraining check for classifier: BDTG(16 inputs)

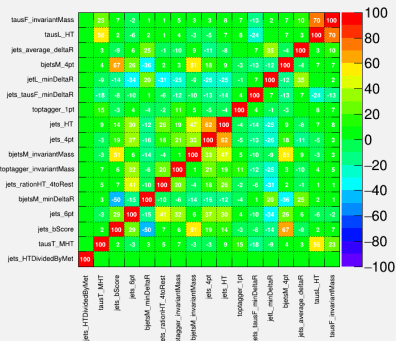


TMVA overtraining check for classifier: BDT(16 inputs)



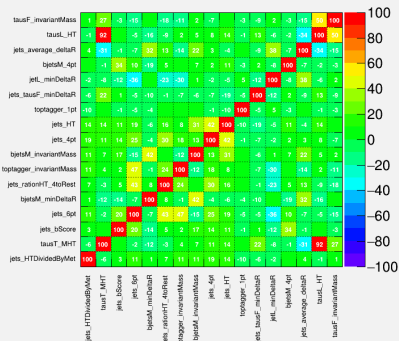
Correlation Matrix (signal)

(17 input variables)

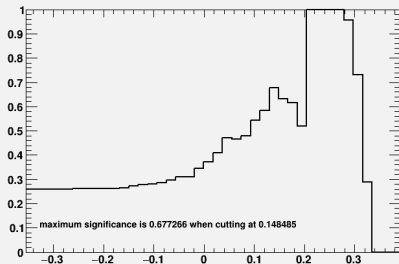


Correlation Matrix (background)

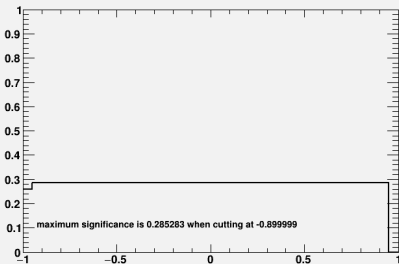
(17 input variables)



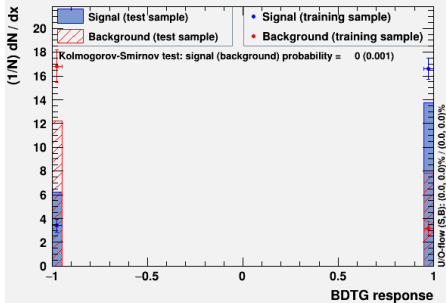
Significance of BDT(17 inputs)



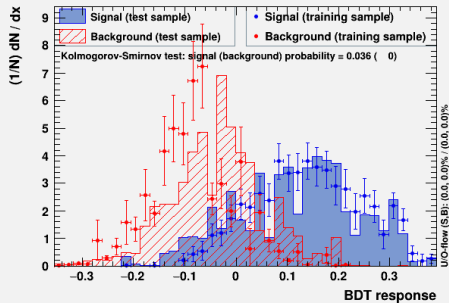
Significance of BDTG(17 inputs)



TMVA overtraining check for classifier: BDTG(17 inputs)

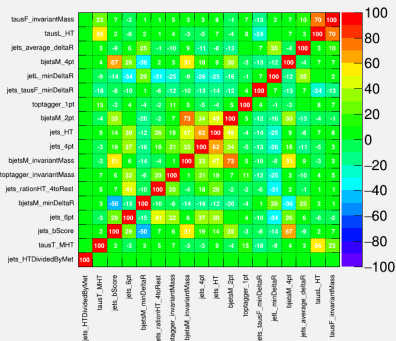


TMVA overtraining check for classifier: BDT(17 inputs)



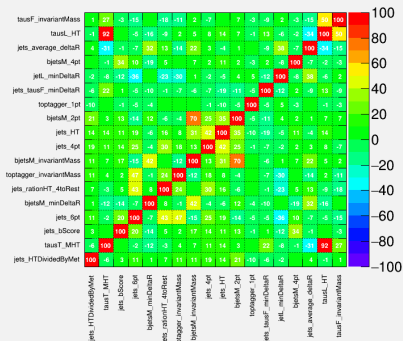
Correlation Matrix (signal)

(18 input variables)

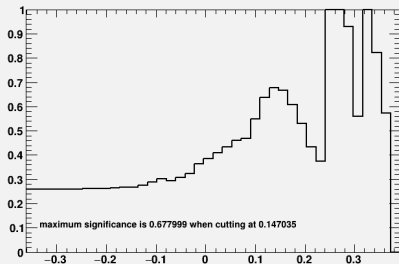


Correlation Matrix (background)

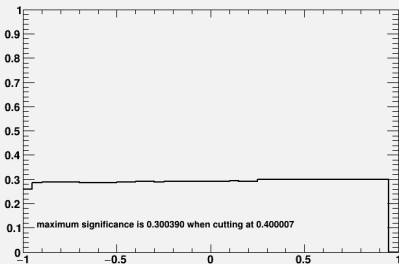
(18 input variables)



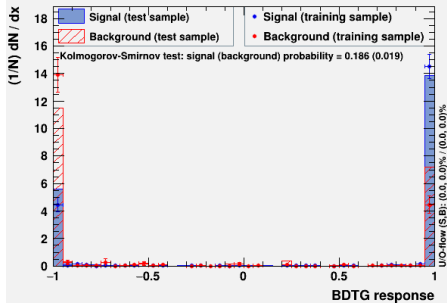
Significance of BDT(18 inputs)



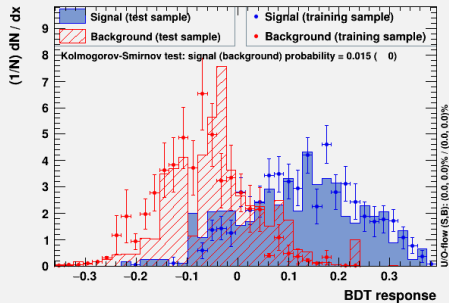
Significance of BDTG(18 inputs)



TMVA overtraining check for classifier: BDTG(18 inputs)

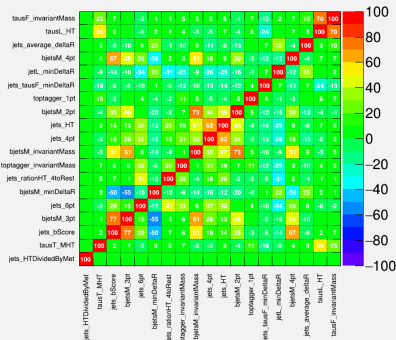


TMVA overtraining check for classifier: BDT(18 inputs)



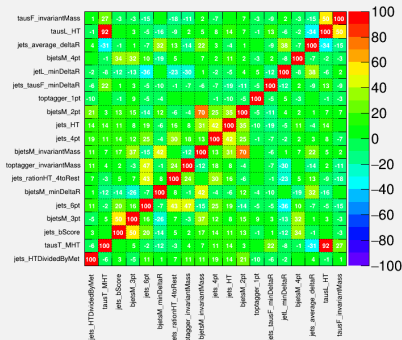
Correlation Matrix (signal)

(19 input variables)

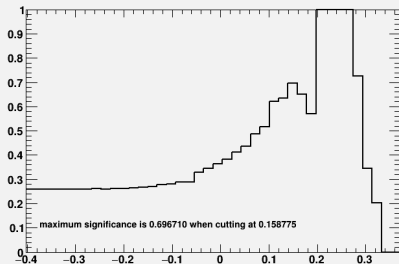


Correlation Matrix (background)

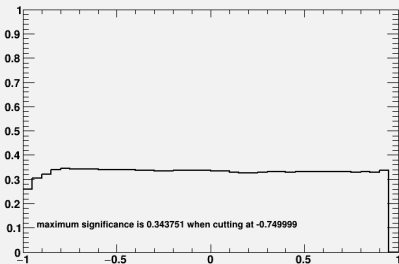
(19 input variables)



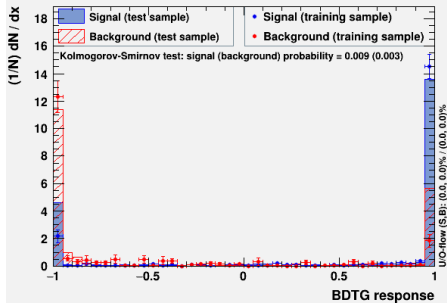
Significance of BDT(19 inputs)



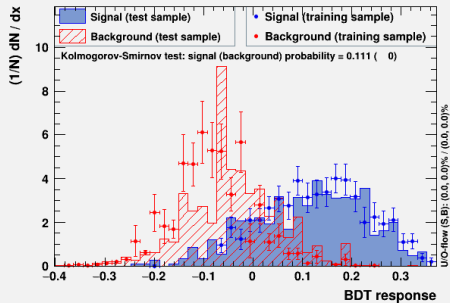
Significance of BDTG(19 inputs)



TMVA overtraining check for classifier: BDTG(19 inputs)

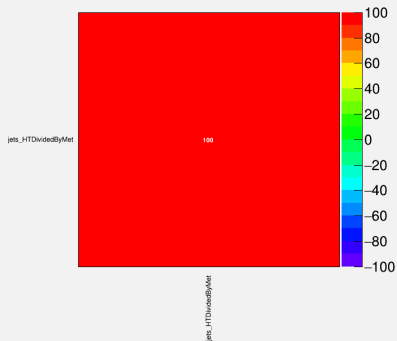


TMVA overtraining check for classifier: BDT(19 inputs)



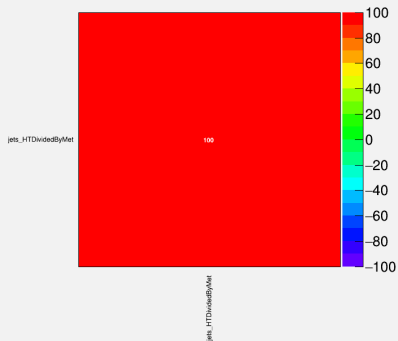
Correlation Matrix (signal)

(1 input variables)

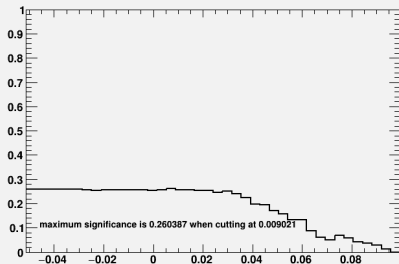


Correlation Matrix (background)

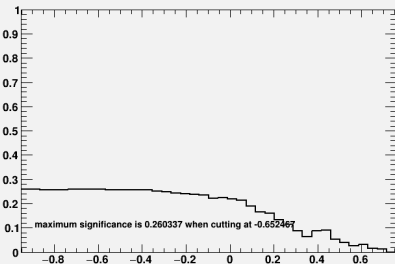
(1 input variables)



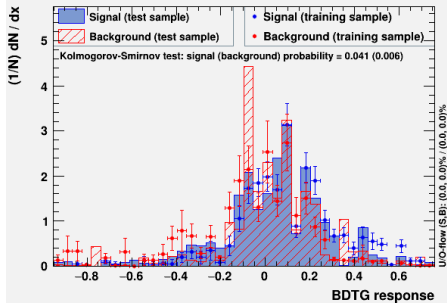
Significance of BDT(1 inputs)



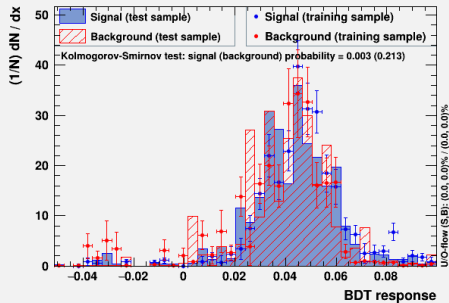
Significance of BDTG(1 inputs)



TMVA overtraining check for classifier: BDTG(1 inputs)

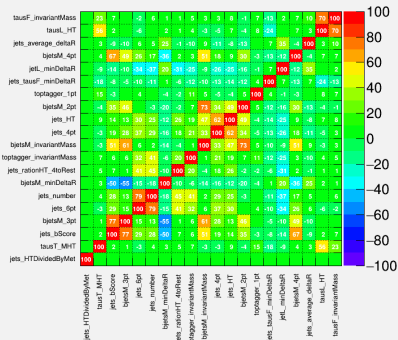


TMVA overtraining check for classifier: BDT(1 inputs)



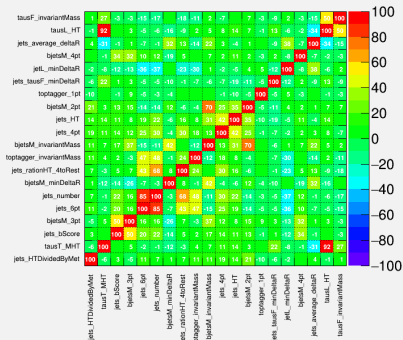
Correlation Matrix (signal)

(20 input variables)

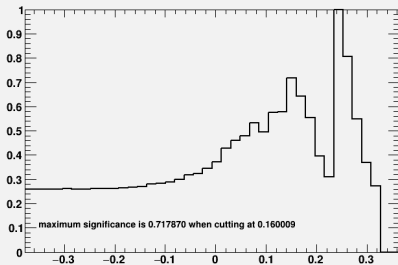


Correlation Matrix (background)

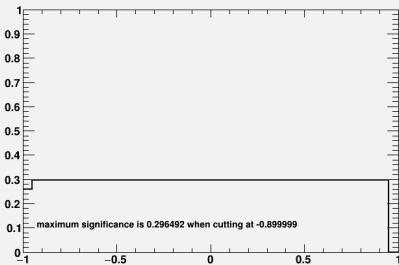
(20 input variables)



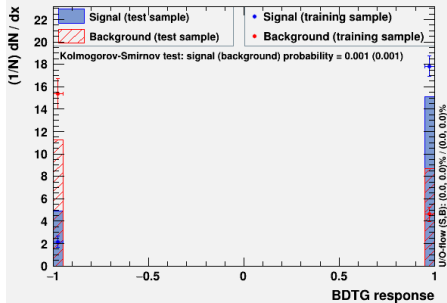
Significance of BDT(20 inputs)



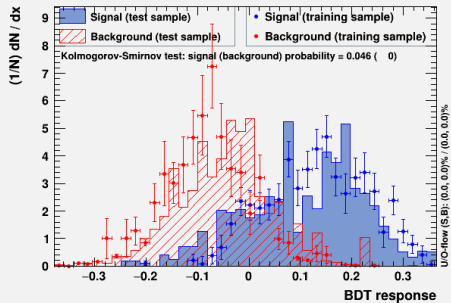
Significance of BDTG(20 inputs)



TMVA overtraining check for classifier: BDTG(20 inputs)

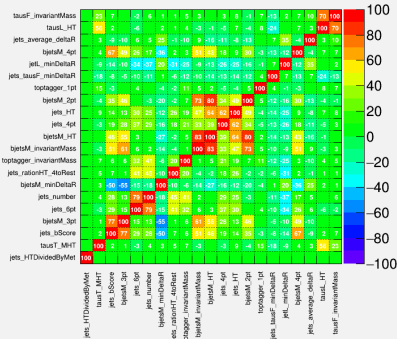


TMVA overtraining check for classifier: BDT(20 inputs)



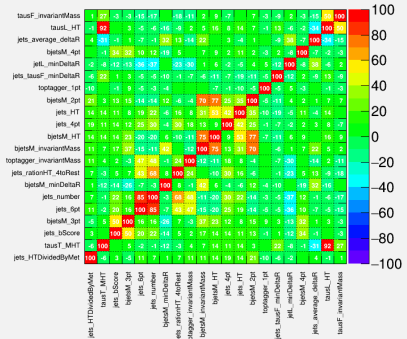
Correlation Matrix (signal)

(21 input variables)

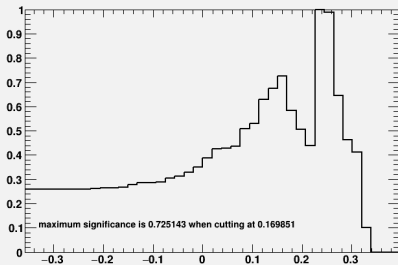


Correlation Matrix (background)

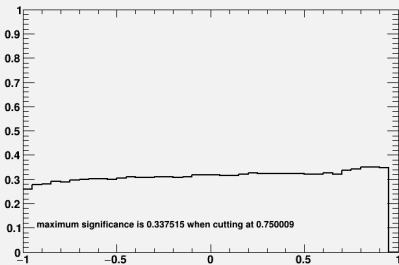
(21 input variables)



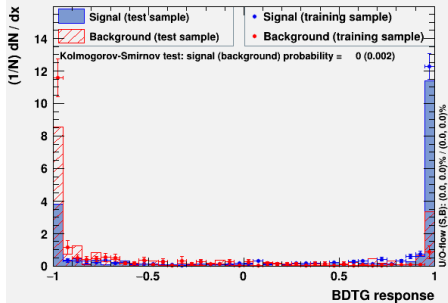
Significance of BDT(21 inputs)



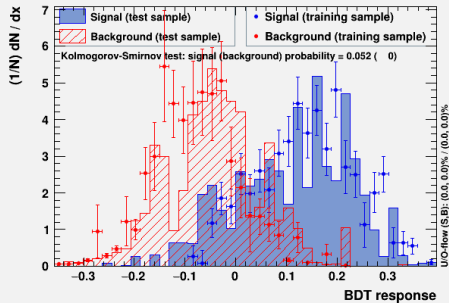
Significance of BDTG(21 inputs)



TMVA overtraining check for classifier: BDTG(21 inputs)

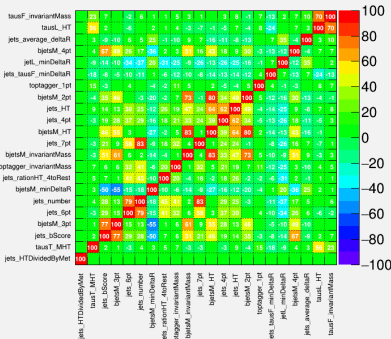


TMVA overtraining check for classifier: BDT(21 inputs)



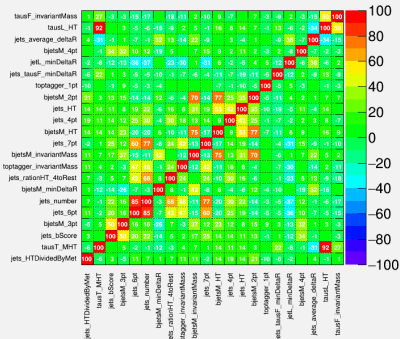
Correlation Matrix (signal)

(22 input variables)

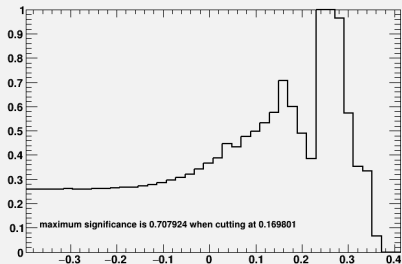


Correlation Matrix (background)

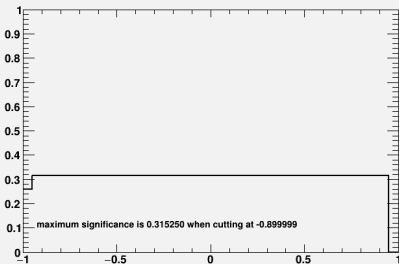
(22 input variables)



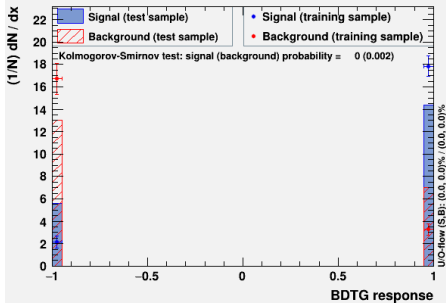
Significance of BDT(22 inputs)



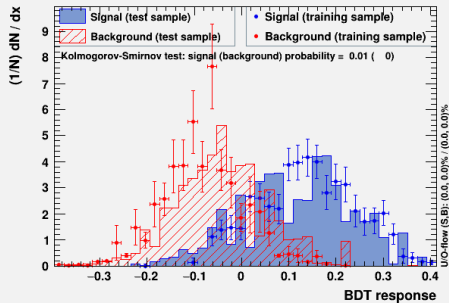
Significance of BDTG(22 inputs)



TMVA overtraining check for classifier: BDTG(22 inputs)

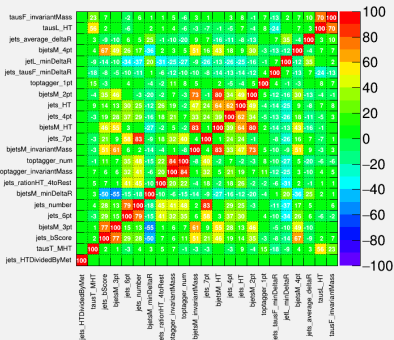


TMVA overtraining check for classifier: BDT(22 inputs)



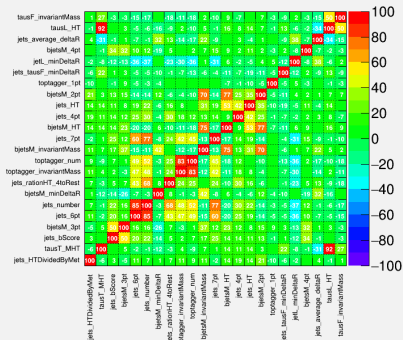
Correlation Matrix (signal)

(23 input variables)

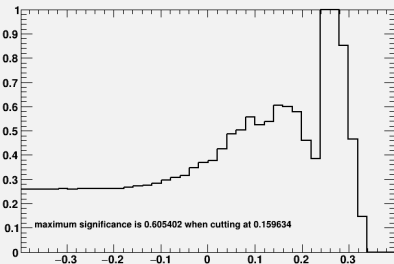


Correlation Matrix (background)

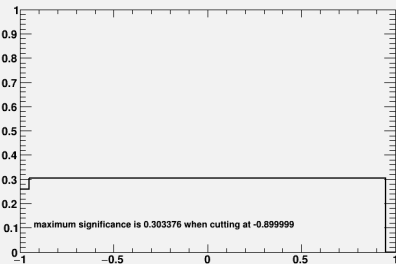
(23 input variables)



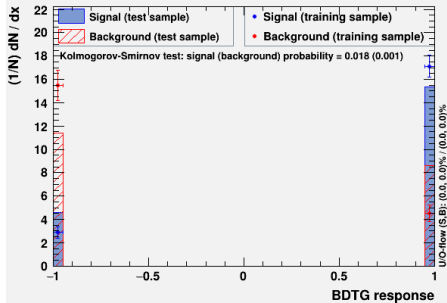
Significance of BDT(23 inputs)



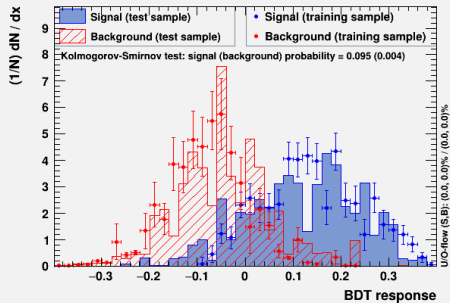
Significance of BDTG(23 inputs)



TMVA overtraining check for classifier: BDTG(23 inputs)

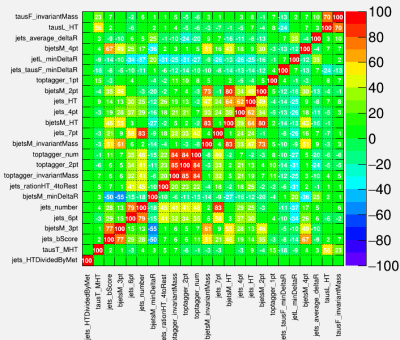


TMVA overtraining check for classifier: BDT(23 inputs)



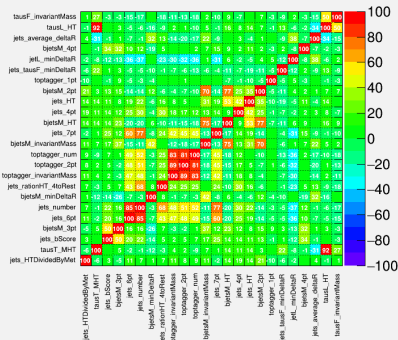
Correlation Matrix (signal)

(24 input variables)

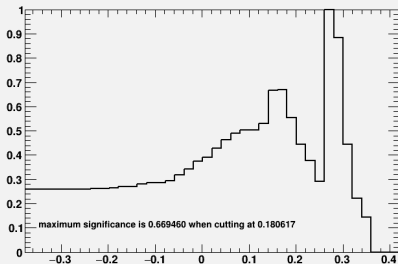


Correlation Matrix (background)

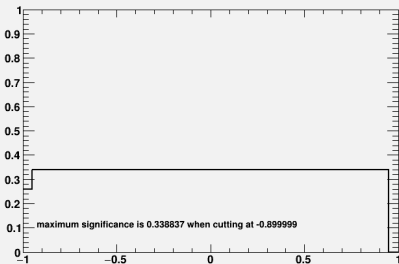
(24 input variables)



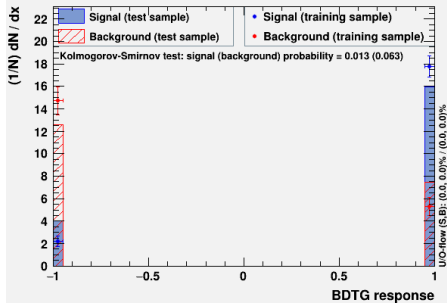
Significance of BDT(24 inputs)



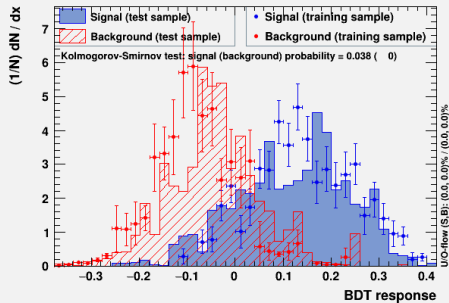
Significance of BDTG(24 inputs)



TMVA overtraining check for classifier: BDTG(24 inputs)

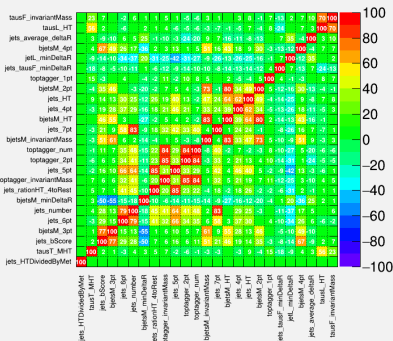


TMVA overtraining check for classifier: BDT(24 inputs)



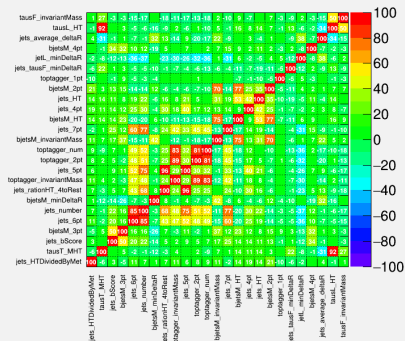
Correlation Matrix (signal)

(25 input variables)

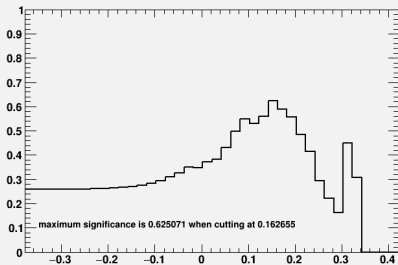


Correlation Matrix (background)

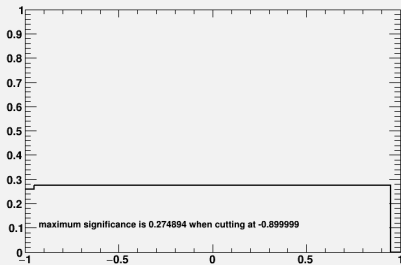
(25 input variables)



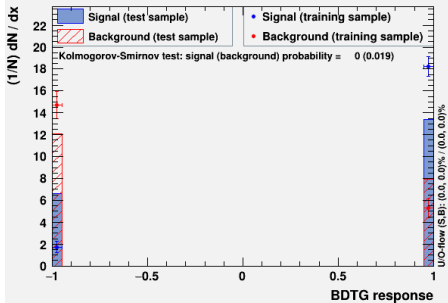
Significance of BDT(25 inputs)



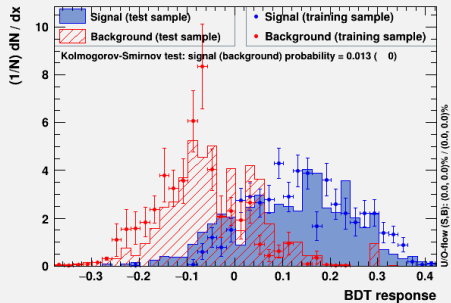
Significance of BDTG(25 inputs)



TMVA overtraining check for classifier: BDTG(25 inputs)

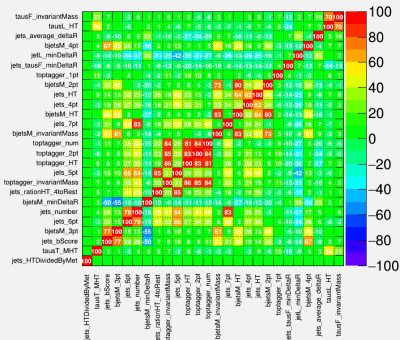


TMVA overtraining check for classifier: BDT(25 inputs)



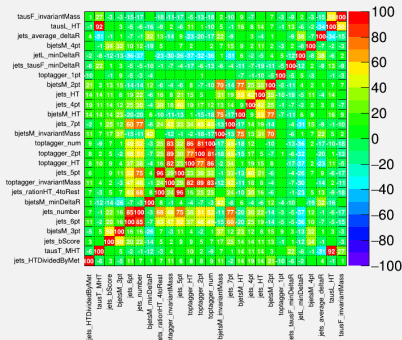
Correlation Matrix (signal)

(26 input variables)

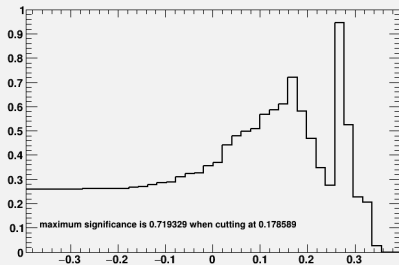


Correlation Matrix (background)

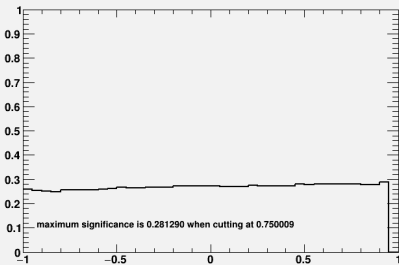
(26 input variables)



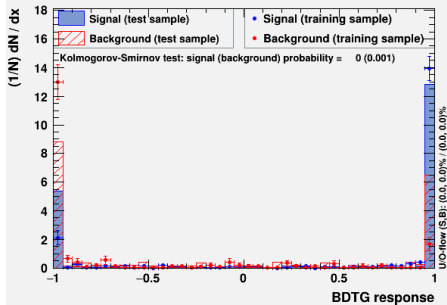
Significance of BDT(26 inputs)



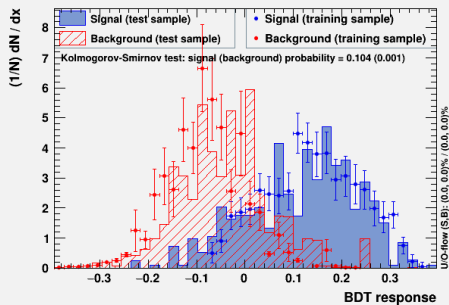
Significance of BDTG(26 inputs)



TMVA overtraining check for classifier: BDTG(26 inputs)

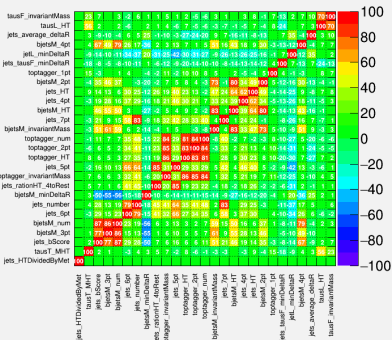


TMVA overtraining check for classifier: BDT(26 inputs)



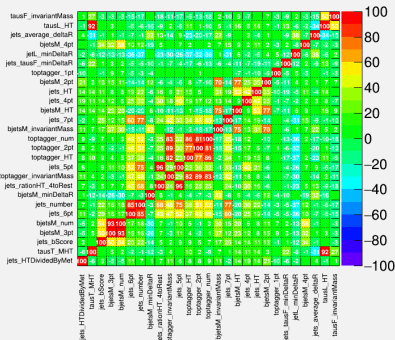
Correlation Matrix (signal)

(27 input variables)

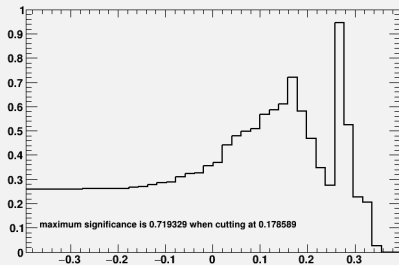


Correlation Matrix (background)

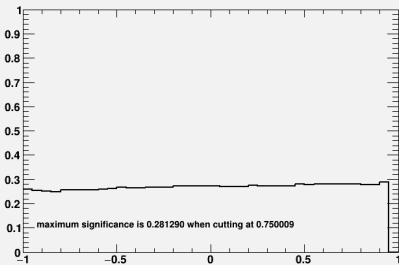
(27 input variables)



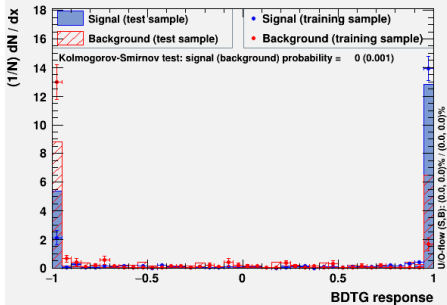
Significance of BDT(27 inputs)



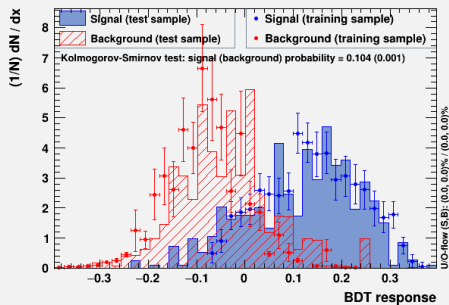
Significance of BDTG(27 inputs)



TMVA overtraining check for classifier: BDTG(27 inputs)

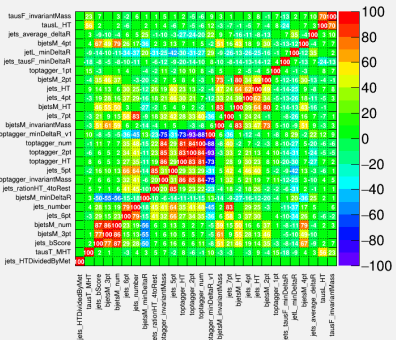


TMVA overtraining check for classifier: BDT(27 inputs)



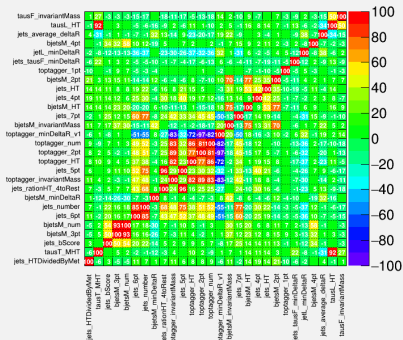
Correlation Matrix (signal)

(28 input variables)

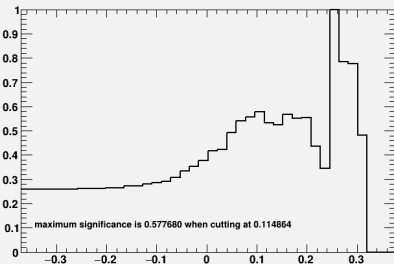


Correlation Matrix (background)

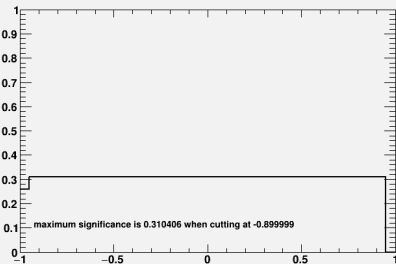
(28 input variables)



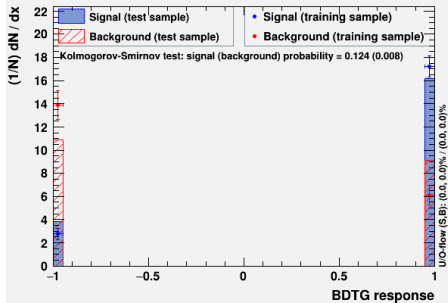
Significance of BDT(28 inputs)



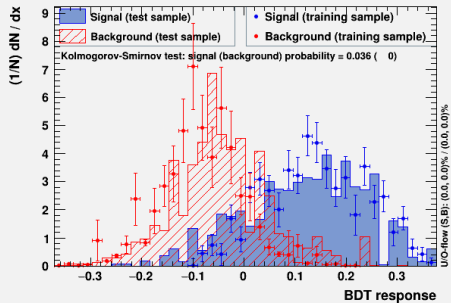
Significance of BDTG(28 inputs)



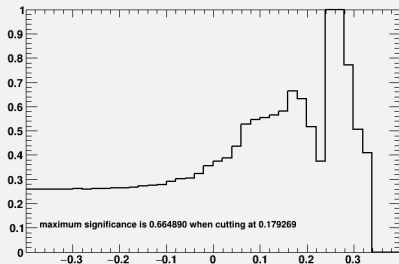
TMVA overtraining check for classifier: BDTG(28 inputs)



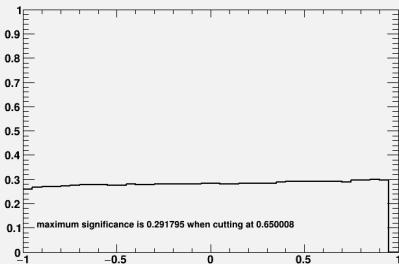
TMVA overtraining check for classifier: BDT(28 inputs)



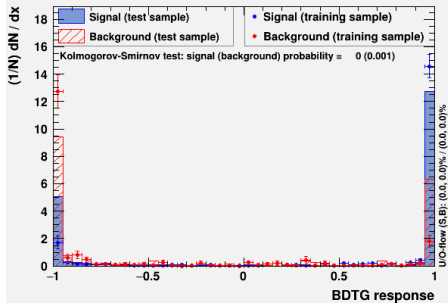
Significance of BDT(29 inputs)



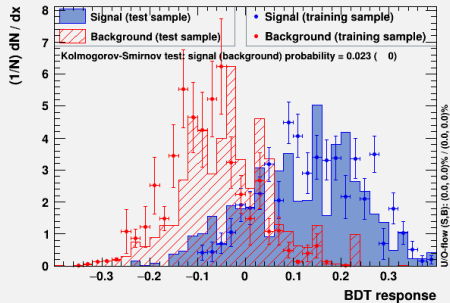
Significance of BDTG(29 inputs)



TMVA overtraining check for classifier: BDTG(29 inputs)

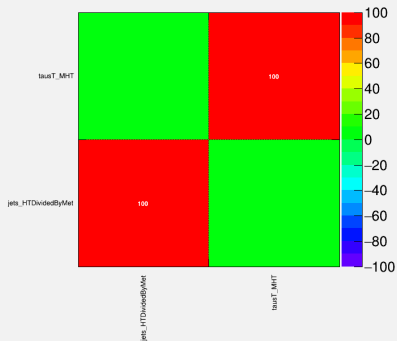


TMVA overtraining check for classifier: BDT(29 inputs)



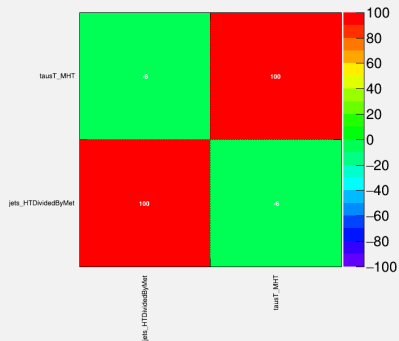
Correlation Matrix (signal)

(2 input variables)

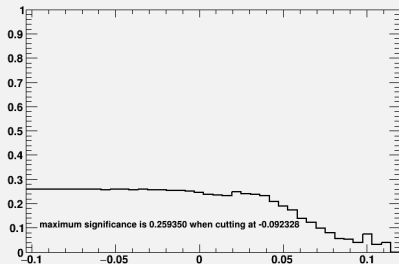


Correlation Matrix (background)

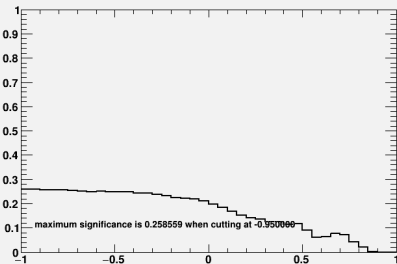
(2 input variables)



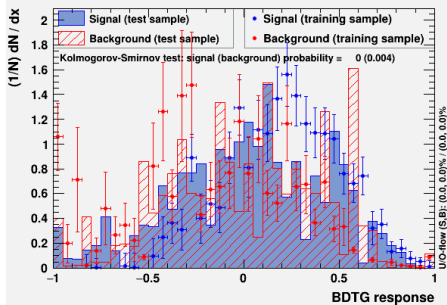
Significance of BDT(2 inputs)



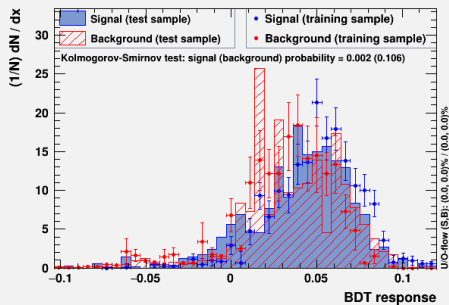
Significance of BDTG(2 inputs)



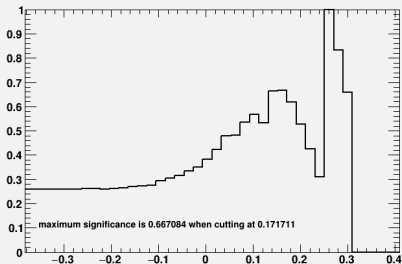
TMVA overtraining check for classifier: BDTG(2 inputs)



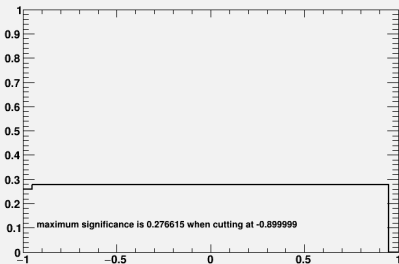
TMVA overtraining check for classifier: BDT(2 inputs)



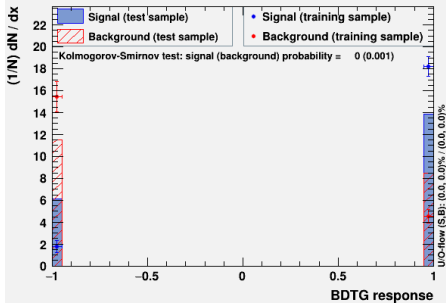
Significance of BDT(30 inputs)



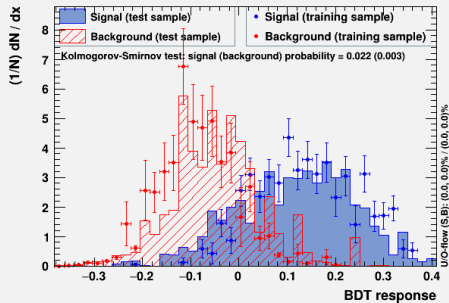
Significance of BDTG(30 inputs)



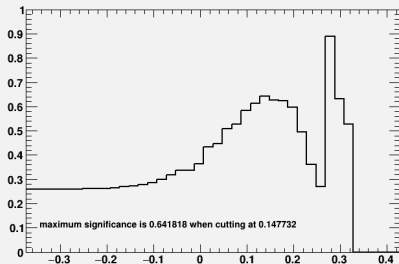
TMVA overtraining check for classifier: BDTG(30 inputs)



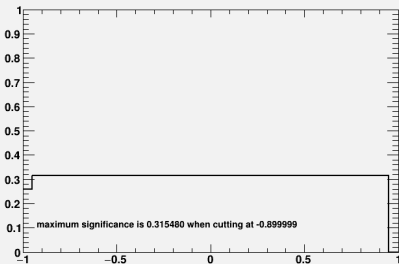
TMVA overtraining check for classifier: BDT(30 inputs)



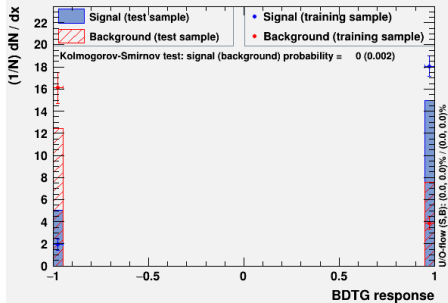
Significance of BDT(31 inputs)



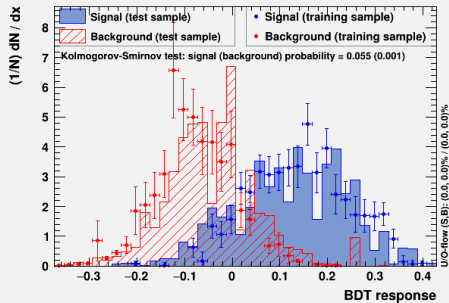
Significance of BDTG(31 inputs)



TMVA overtraining check for classifier: BDTG(31 inputs)

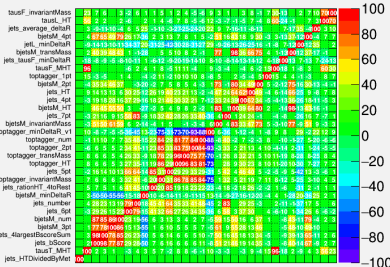


TMVA overtraining check for classifier: BDT(31 inputs)



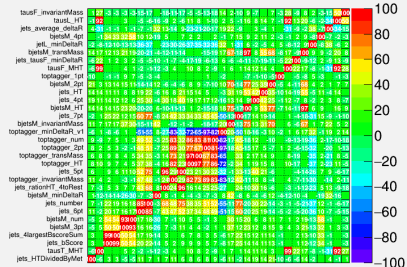
Correlation Matrix (signal)

(32 input variables)

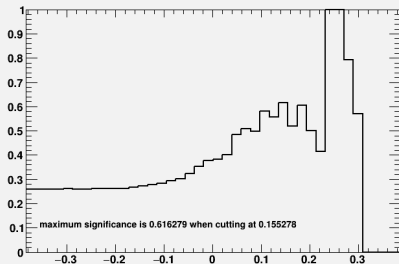


Correlation Matrix (background)

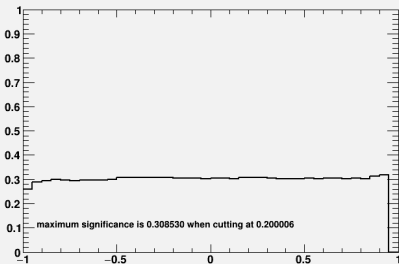
(32 input variables)



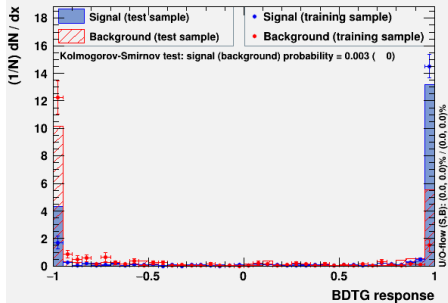
Significance of BDT(32 inputs)



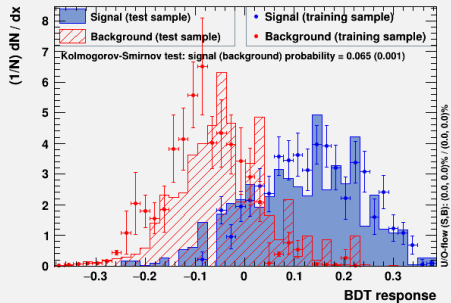
Significance of BDTG(32 inputs)



TMVA overtraining check for classifier: BDTG(32 inputs)

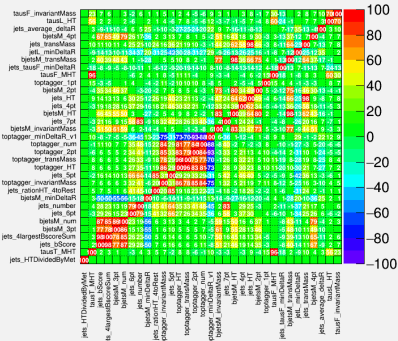


TMVA overtraining check for classifier: BDT(32 inputs)



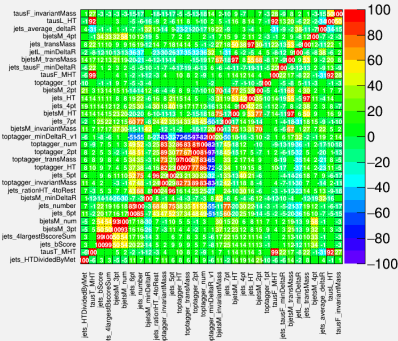
Correlation Matrix (signal)

(33 input variables)

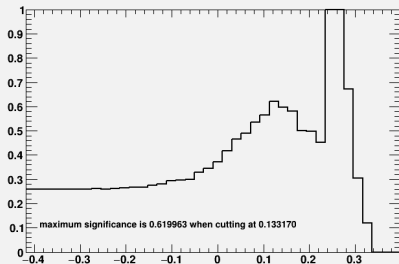


Correlation Matrix (background)

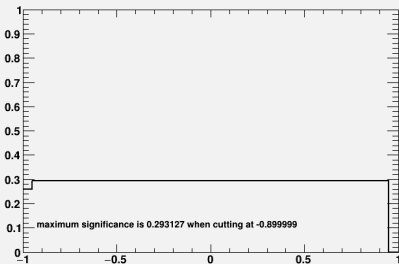
(33 input variables)



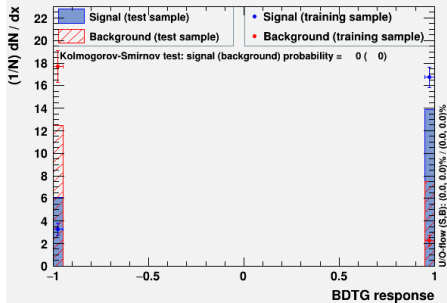
Significance of BDT(33 inputs)



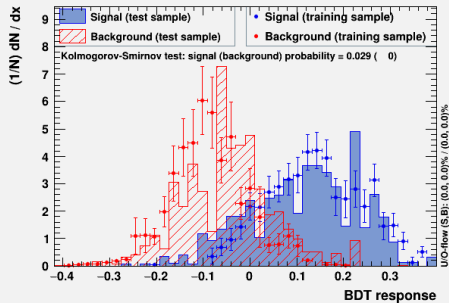
Significance of BDTG(33 inputs)



TMVA overtraining check for classifier: BDTG(33 inputs)

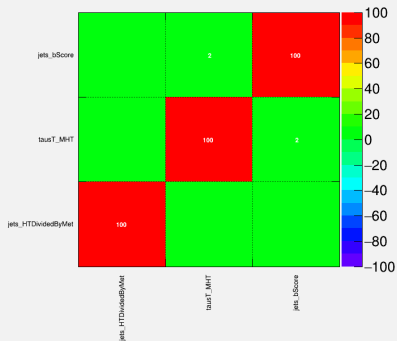


TMVA overtraining check for classifier: BDT(33 inputs)



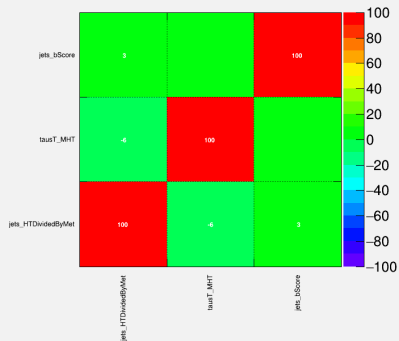
Correlation Matrix (signal)

(3 input variables)

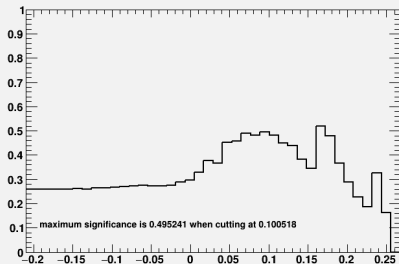


Correlation Matrix (background)

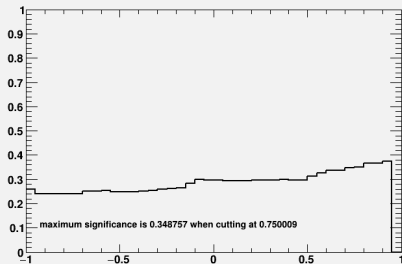
(3 input variables)



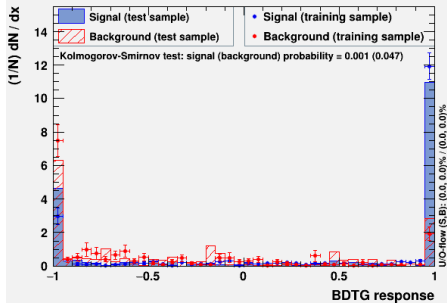
Significance of BDT(3 inputs)



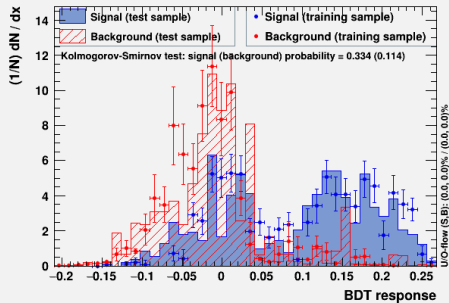
Significance of BDTG(3 inputs)



TMVA overtraining check for classifier: BDTG(3 inputs)

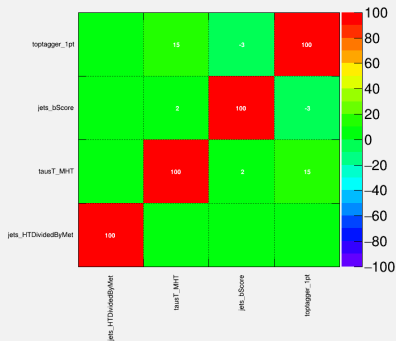


TMVA overtraining check for classifier: BDT(3 inputs)



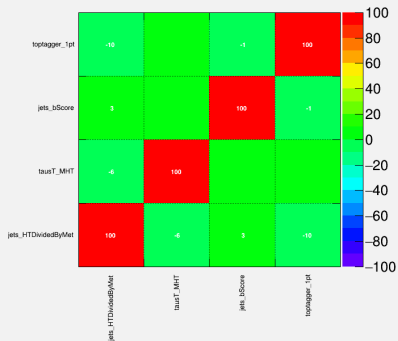
Correlation Matrix (signal)

(4 input variables)

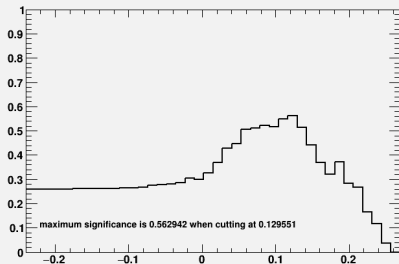


Correlation Matrix (background)

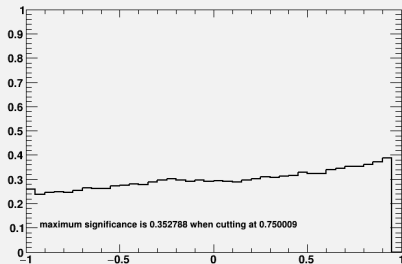
(4 input variables)



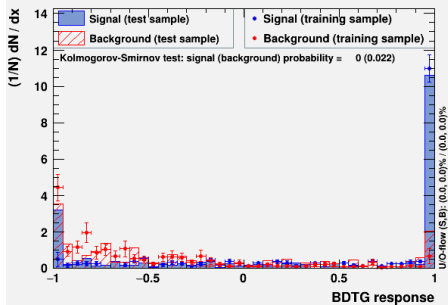
Significance of BDT(4 inputs)



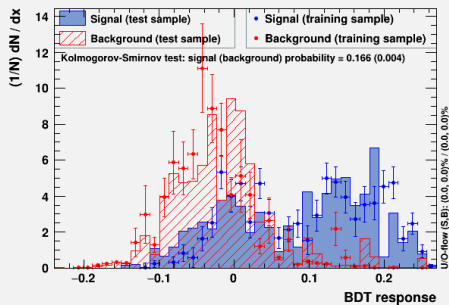
Significance of BDTG(4 inputs)



TMVA overtraining check for classifier: BDTG(4 inputs)

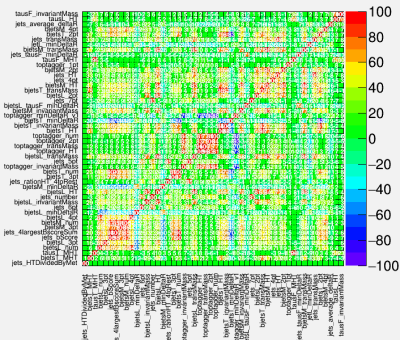


TMVA overtraining check for classifier: BDT(4 inputs)



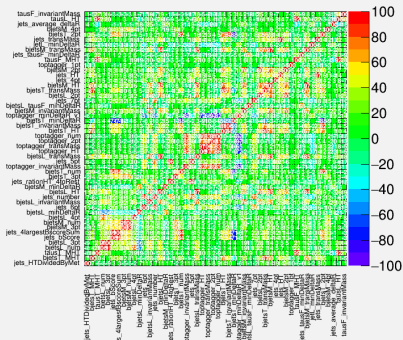
Correlation Matrix (signal)

(50 input variables)

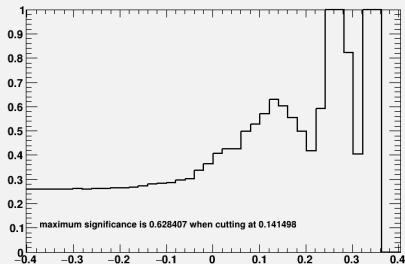


Correlation Matrix (background)

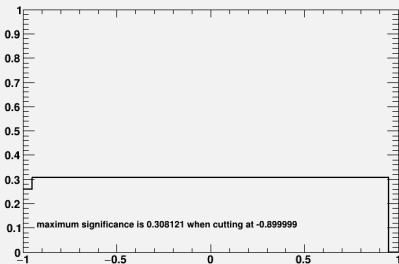
(50 input variables)



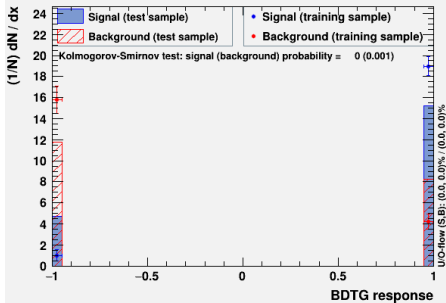
Significance of BDT(50 inputs)



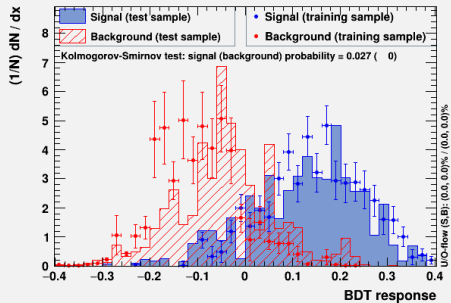
Significance of BDTG(50 inputs)



TMVA overtraining check for classifier: BDTG(50 inputs)

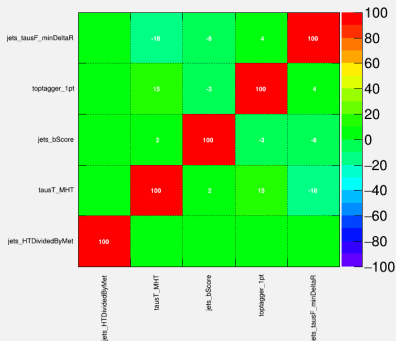


TMVA overtraining check for classifier: BDT(50 inputs)



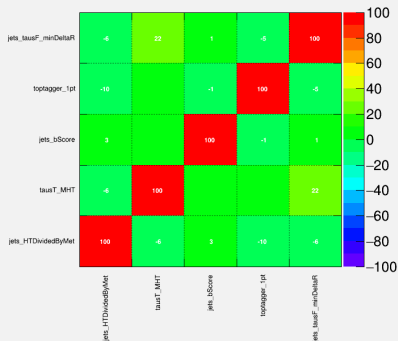
Correlation Matrix (signal)

(5 input variables)

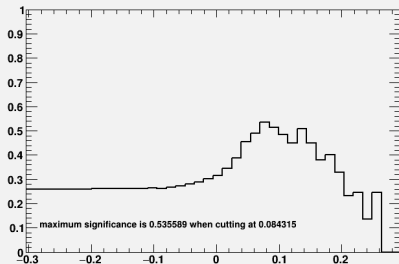


Correlation Matrix (background)

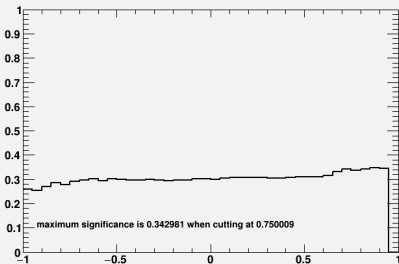
(5 input variables)



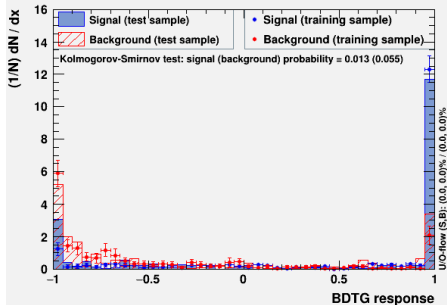
Significance of BDT(5 inputs)



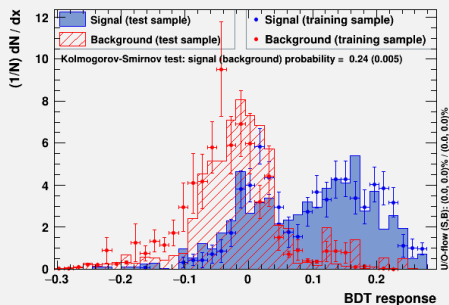
Significance of BDTG(5 inputs)



TMVA overtraining check for classifier: BDTG(5 inputs)

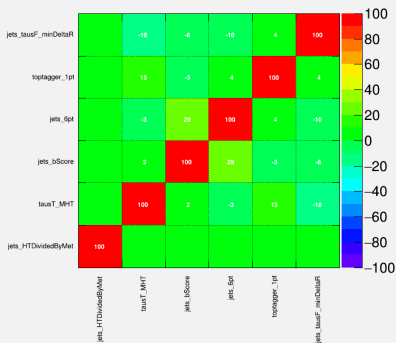


TMVA overtraining check for classifier: BDT(5 inputs)



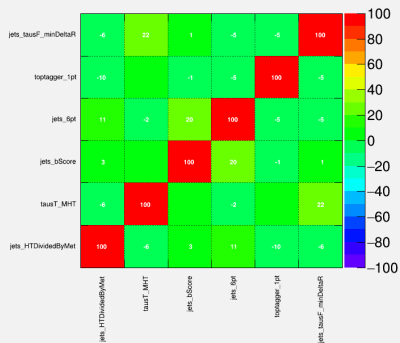
Correlation Matrix (signal)

(6 input variables)

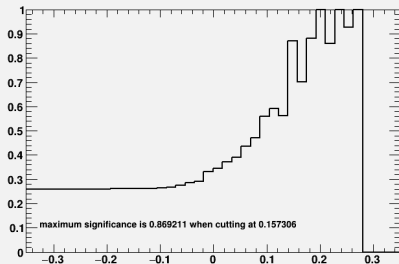


Correlation Matrix (background)

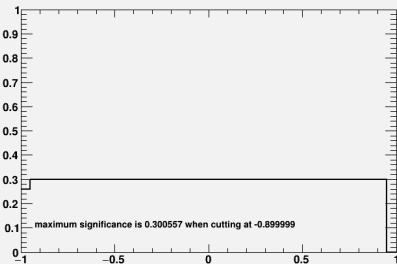
(6 input variables)



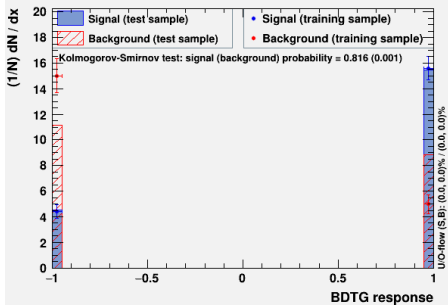
Significance of BDT(6 inputs)



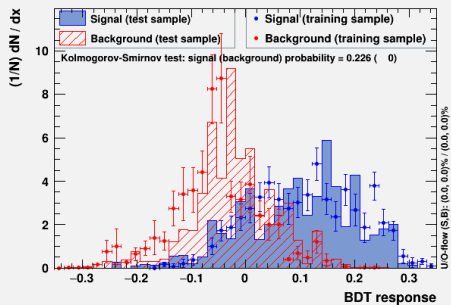
Significance of BDTG(6 inputs)



TMVA overtraining check for classifier: BDTG(6 inputs)

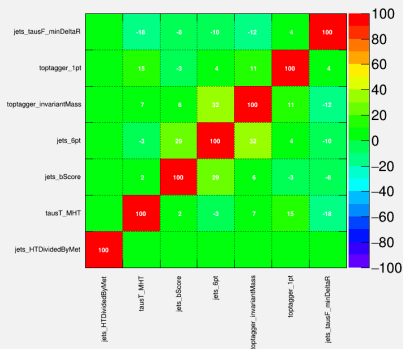


TMVA overtraining check for classifier: BDT(6 inputs)



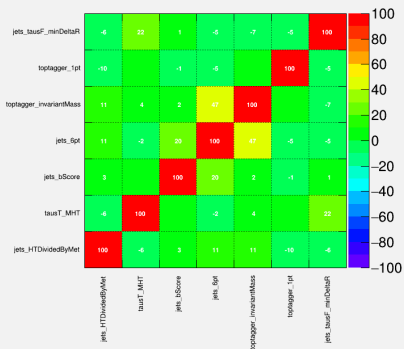
Correlation Matrix (signal)

(7 input variables)

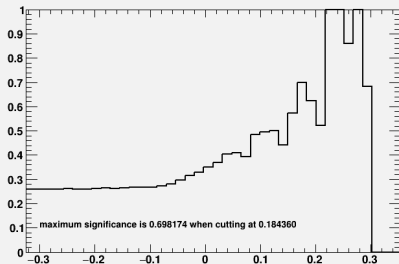


Correlation Matrix (background)

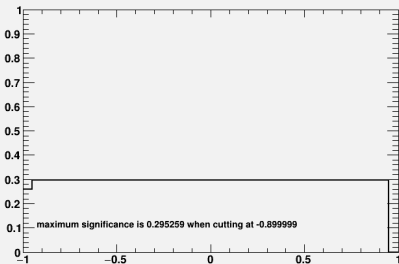
(7 input variables)



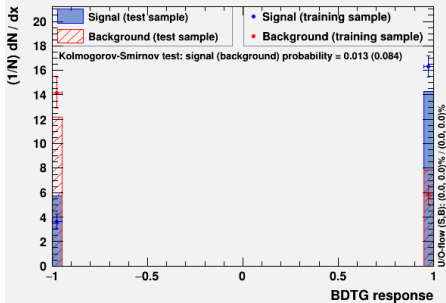
Significance of BDT(7 inputs)



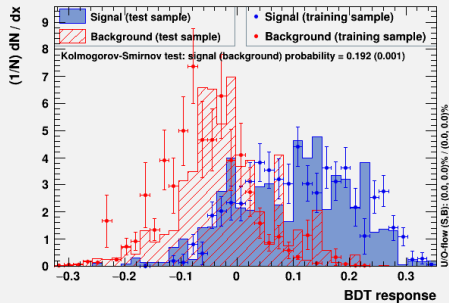
Significance of BDTG(7 inputs)



TMVA overtraining check for classifier: BDTG(7 inputs)

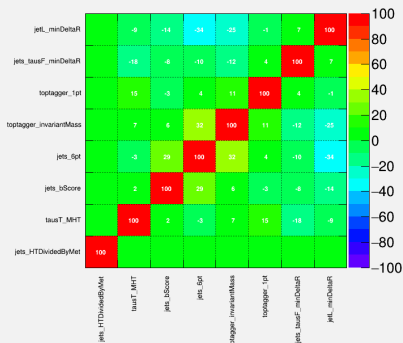


TMVA overtraining check for classifier: BDT(7 inputs)



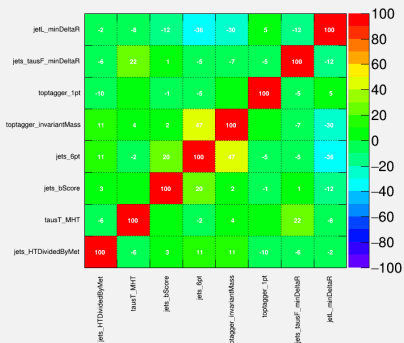
Correlation Matrix (signal)

(8 input variables)

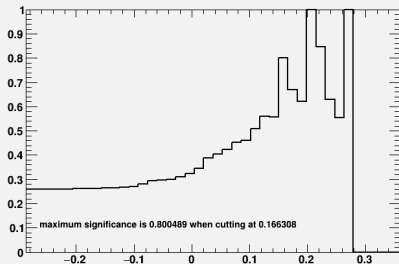


Correlation Matrix (background)

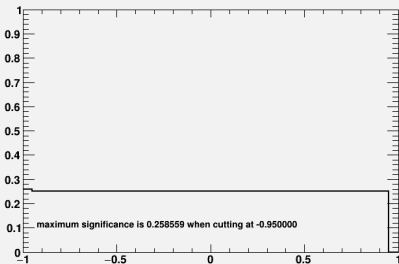
(8 input variables)



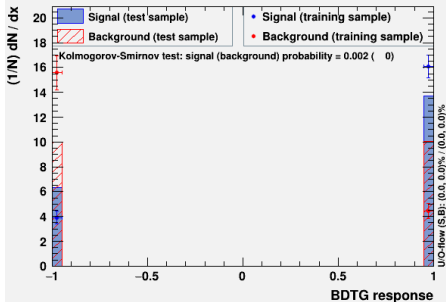
Significance of BDT(8 inputs)



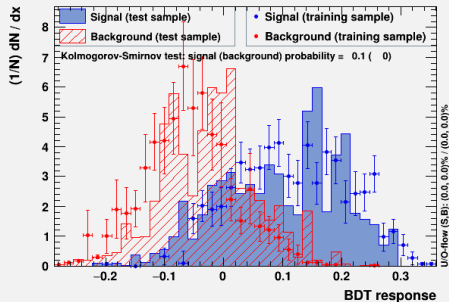
Significance of BDTG(8 inputs)



TMVA overtraining check for classifier: BDTG(8 inputs)

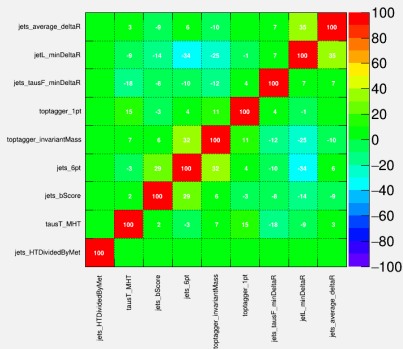


TMVA overtraining check for classifier: BDT(8 inputs)



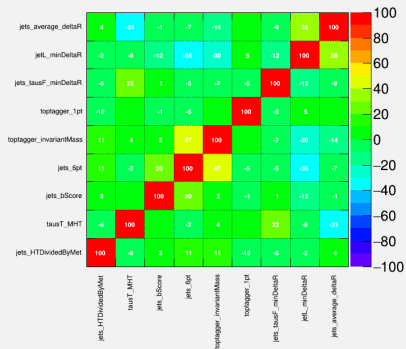
Correlation Matrix (signal)

(9 input variables)

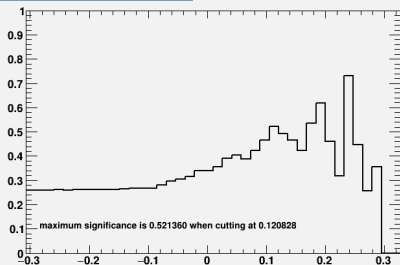


Correlation Matrix (background)

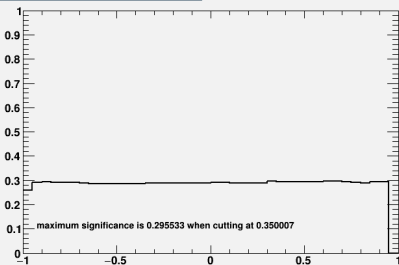
(9 input variables)



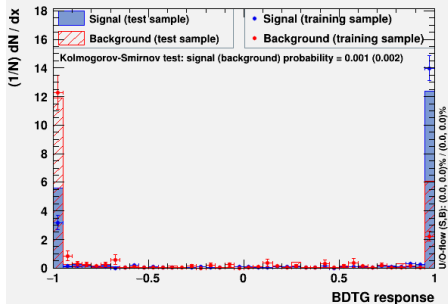
Significance of BDT(9 inputs)



Significance of BDTG(9 inputs)



TMVA overtraining check for classifier: BDTG(9 inputs)



TMVA overtraining check for classifier: BDT(9 inputs)

