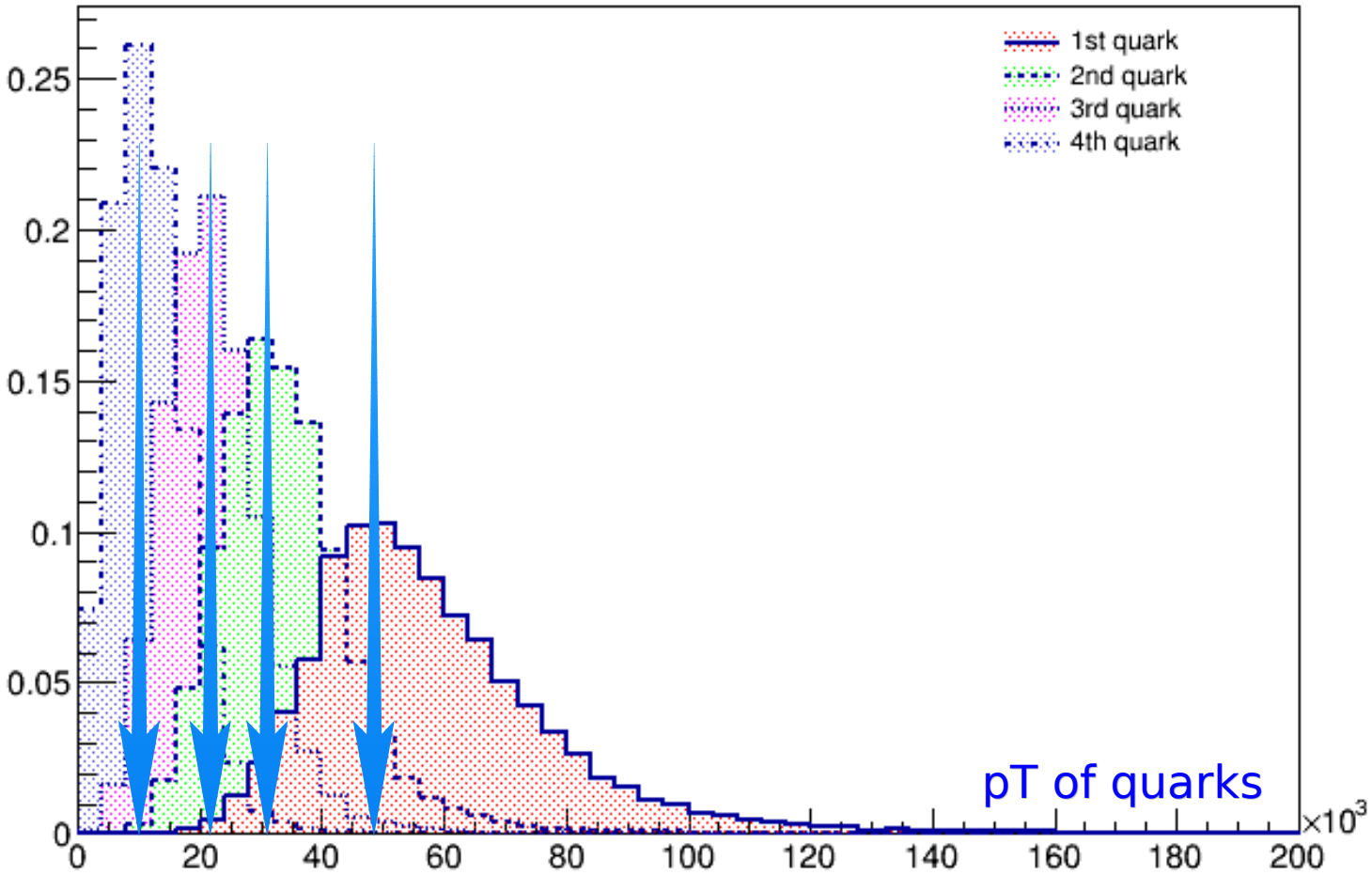
WhadWhadyy analysis
Jet pT

Xiaohu SUN, IHEP, Beijing, 07-05-2014

Brief review on pT of quarks

- First of all check the pT distributions of all quarks at parton level
- pT of 1st, 2nd , 3rd, 4th quarks are shown



*the stats of private MC samples used in this talk is ~20K

Reminder on truth pT cuts

- Apply different pT cuts and the efficiencies are shown as below

pT threshold	events	efficiencies
non	19430	100%
5 GeV	17168	88%
10 GeV	11389	59%
15 GeV	5437	28%
20 GeV	1963	10%
25 GeV	**594**	**3%**

After reconstruction

- First of all, use default cuts after HSG1 official cuts and NJets>=4
  - Eta<2.4 pT>25GeV
  - Eta>2.4 pT>30GeV

specific	#jets	%
from W	7116	100%
from 1st W	3899	55%
from 2nd W	3217	45%

specific	#evts	%
none	2914	-
xj from W	2902	100%
1j from W	282	10%
2j from W	1209	42%
3j from W	1228	42%
4j from W	183	6%

specific	#evts	%
none	2914	-
xpair from W	1887	65%
1pair from W	1704	58%
2pair from W	183	6%
pair from 1st W	1243	43%
pair from 2nd W	827	28%

*percentages are made by #(specific)/#(flag_all&NJets>=4)

After reconstruction

- First of all, use default cuts after HSG1 official cuts and NJets>=4
  - Eta<2.4 pT>20GeV
  - Eta>2.4 pT>25GeV

specific	#jets	%
from W	11506	100%
from 1st W	6255	54%
from 2nd W	5251	46%

specific	#evts	%
none	4466	-
xj from W	4447	100%
1j from W	350	8%
2j from W	1572	35%
3j from W	2088	47%
4j from W	437	10%

specific	#evts	%
none	4466	-
xpair from W	3115	70%
1pair from W	2678	60%
2pair from W	437	10%
pair from 1st W	2104	47%
pair from 2nd W	1448	32%

*percentages are made by #(specific)/#(flag_all&NJets>=4)

After reconstruction

- First of all, use default cuts after HSG1 official cuts and NJets>=4
  - Eta<2.4 pT>15GeV
  - Eta>2.4 pT>20GeV

specific	#jets	%
from W	16494	100%
from 1st W	8775	53%
from 2nd W	7719	47%

specific	#evts	%
none	6133	-
xj from W	6112	100%
1j from W	407	7%
2j from W	1895	31%
3j from W	2943	48%
4j from W	867	14%

specific	#evts	%
none	6133	-
xpair from W	4504	73%
1pair from W	3637	59%
2pair from W	867	14%
pair from 1st W	3052	50%
pair from 2nd W	2319	38%

*percentages are made by #(specific)/#(flag_all&NJets>=4)

After reconstruction

- First of all, use default cuts after HSG1 official cuts and NJets>=4
  - Eta<2.4 pT>10GeV
  - Eta>2.4 pT>15GeV

specific	#jets	%
from W	21366	100%
from 1st W	11244	53%
from 2nd W	10122	47%

specific	#evts	%
none	7657	-
xj from W	7637	100%
1j from W	404	5%
2j from W	2144	28%
3j from W	3682	48%
4j from W	1407	18%

specific	#evts	%
none	7657	-
xpair from W	5876	77%
1pair from W	4469	58%
2pair from W	1407	18%
pair from 1st W	4045	53%
pair from 2nd W	3238	42%

*percentages are made by #(specific)/#(flag_all&NJets>=4)

backup

- Cutflow with official cuts from yy side

	Unweighted evt	Cut eff (%)
generated	28000	100%
trigger	19953	71%
GRL	19953	71%
detector errors	19953	71%
vertex tracks	19953	71%
pre-selection	15547	56%
photon pT	13996	50%
photon ID	12041	43%
photon isolation	9525	34%
diphoton mass	9525	34%
Additionally Njets>=4	2914	10%
And XXX	-	5%