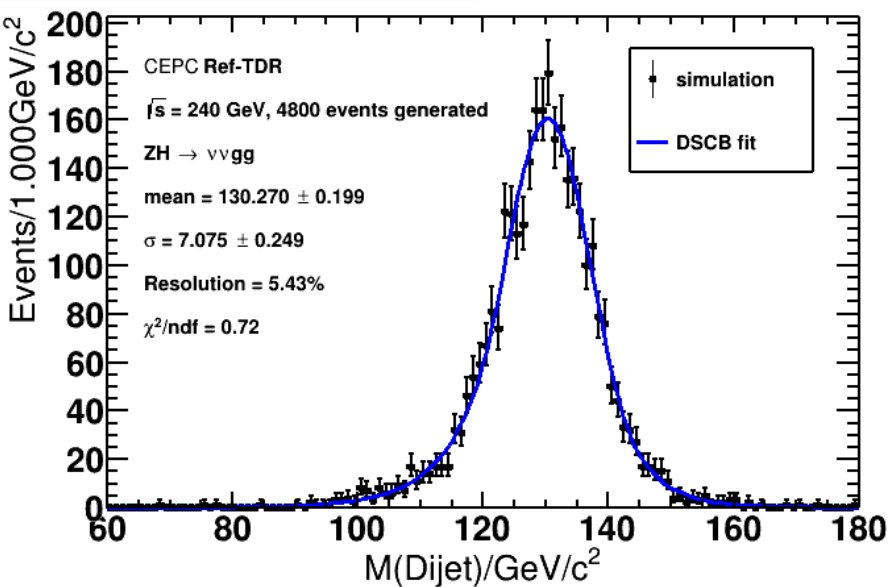


Performance study -- BMR



$ZH \rightarrow \nu v gg$
Release version:
CEPCSW_tdr24.9.1

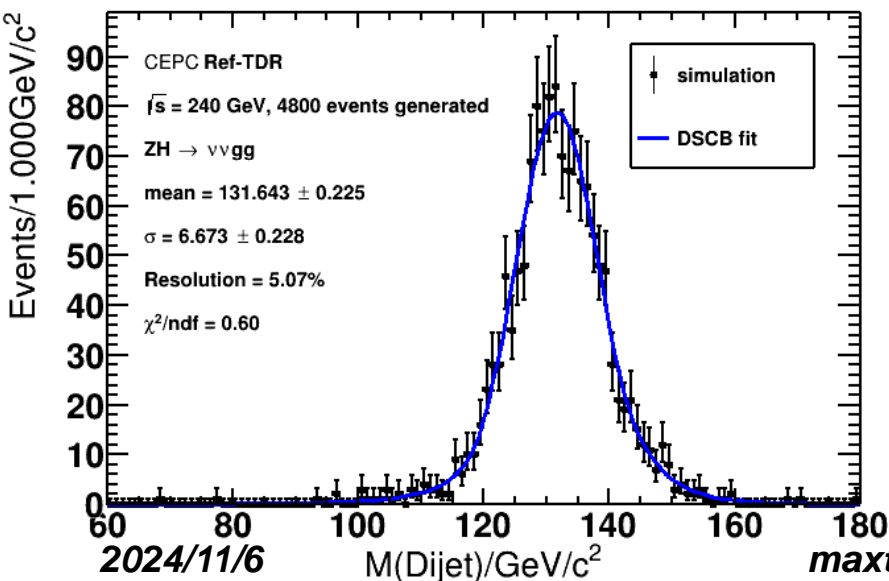
$|\cos\theta_{jet}| < 0.85$:
 $m_H = 130.270 \pm 0.199$
Resolution 5.43%

Efficiency cutflow

$ \cos\theta_{jet} < 0.85$	0.71
truthmatch	0.69
$\Delta R < 0.6$	0.65

Efficiency cutflow

$ \cos\theta_{jet} < 0.5$	0.32
truthmatch	0.31
$\Delta R < 0.6$	0.29



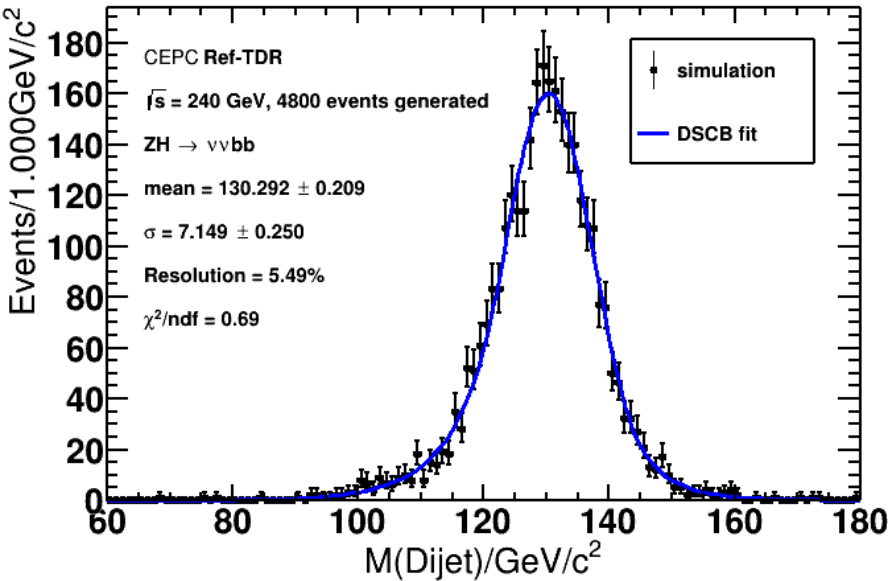
$|\cos\theta_{jet}| < 0.5$:
 $m_H = 131.643 \pm 0.225$
Resolution 5.07%

reference

Table 3. Higgs boson mass resolution (σ/Mean) for different decay modes with jets as final state particles, after event cleaning.

$H \rightarrow bb$	$H \rightarrow cc$	$H \rightarrow gg$	$H \rightarrow WW^*$	$H \rightarrow ZZ^*$
3.63%	3.82%	3.75%	3.81%	3.74%

Performance study -- BMR



$ZH \rightarrow \nu\nu bb$
CEPCSW_tdr24.9.1

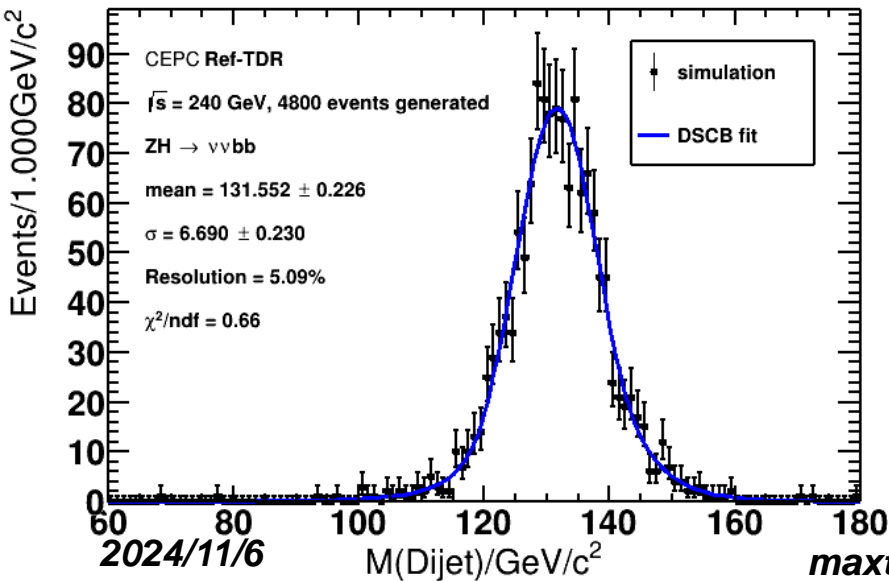
$|\cos\theta_{jet}| < 0.85$:
 $m_H = 130.292 \pm 0.209$
Resolution 5.49%

Efficiency cutflow

$ \cos\theta_{jet} < 0.85$	0.71
truthmatch	0.69
$\Delta R < 0.6$	0.65

Efficiency cutflow

$ \cos\theta_{jet} < 0.5$	0.32
truthmatch	0.31
$\Delta R < 0.6$	0.29



$|\cos\theta_{jet}| < 0.5$:
 $m_H = 131.552 \pm 0.226$
Resolution 5.09%

[reference](#)

Table 3. Higgs boson mass resolution (σ/Mean) for different decay modes with jets as final state particles, after event cleaning.

$H \rightarrow bb$	$H \rightarrow cc$	$H \rightarrow gg$	$H \rightarrow WW^*$	$H \rightarrow ZZ^*$
3.63%	3.82%	3.75%	3.81%	3.74%