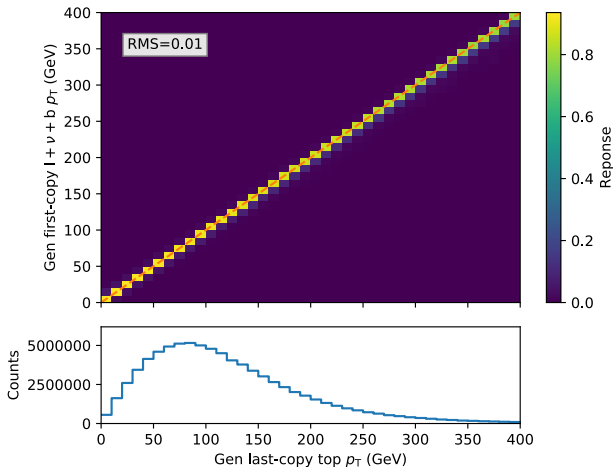


NanoAOD kinematic reconstruction

Jonas Rübenach
EXO Meeting
April 17, 2020

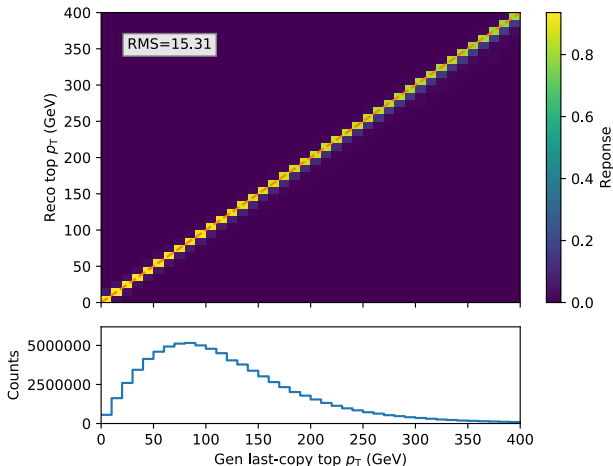


Generator top vs decay products



Negligible differences, only due to numeric precision,

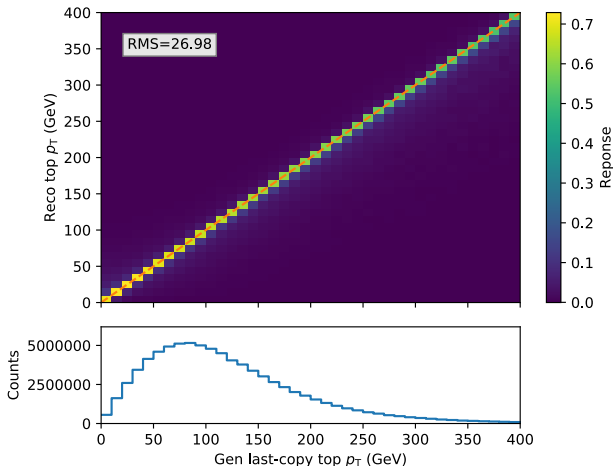
Generator top vs reconstructed top



Gen and Reco agree very well: Shows correctness of implementation.

Generator top vs reconstructed top

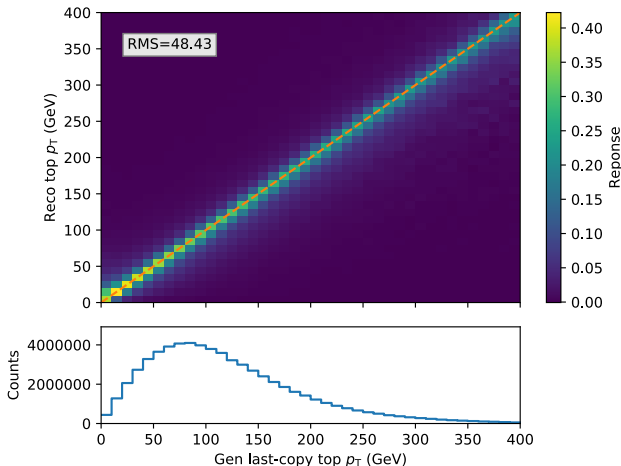
Choosing the lowest m_{tt} solution



As expected, this introduces a small error.

Generator top vs reconstructed top

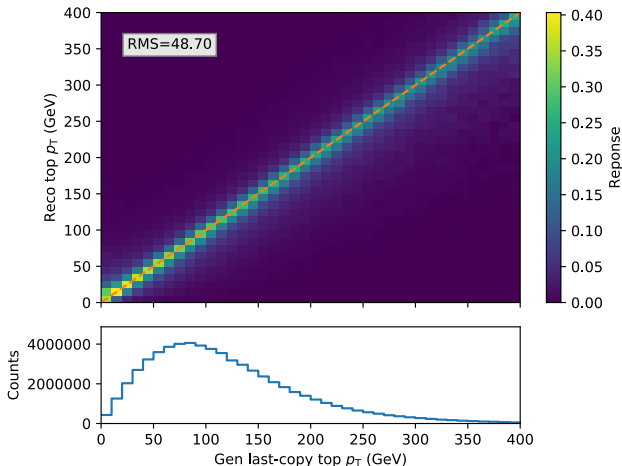
Fixing top mass to 172.5 GeV and sampling W mass



Randomizing input gives errors as expected

Generator top vs reconstructed top

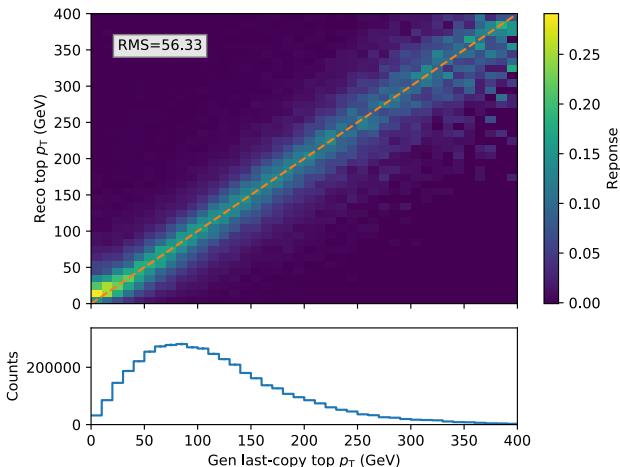
Sampling top and W masses



Seemingly no difference to fixing the top mass

Generator top vs reconstructed top

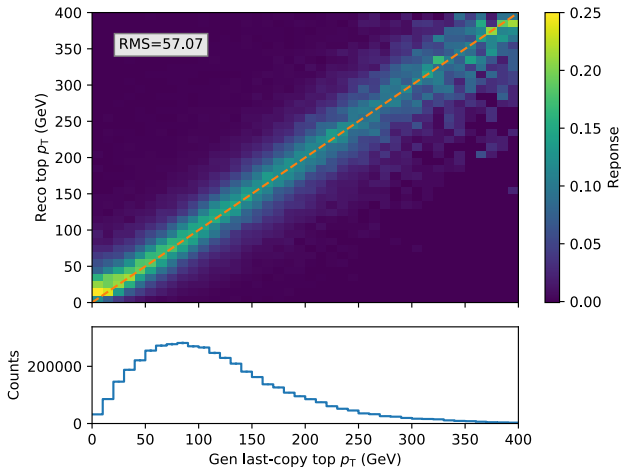
Smearing and mass sampling



Further increase of error

Generator top vs reconstructed top

Min. $m_{t\bar{t}}$ solution, smearing and mass sampling



This shows the complete error introduced by the algorithm

Thank you