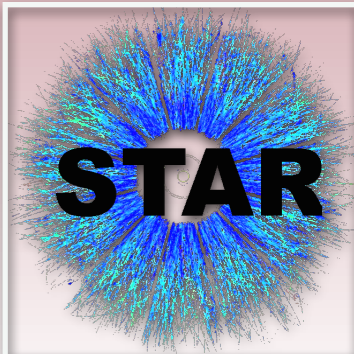

Trigger Bias Discussion on 01-28-16



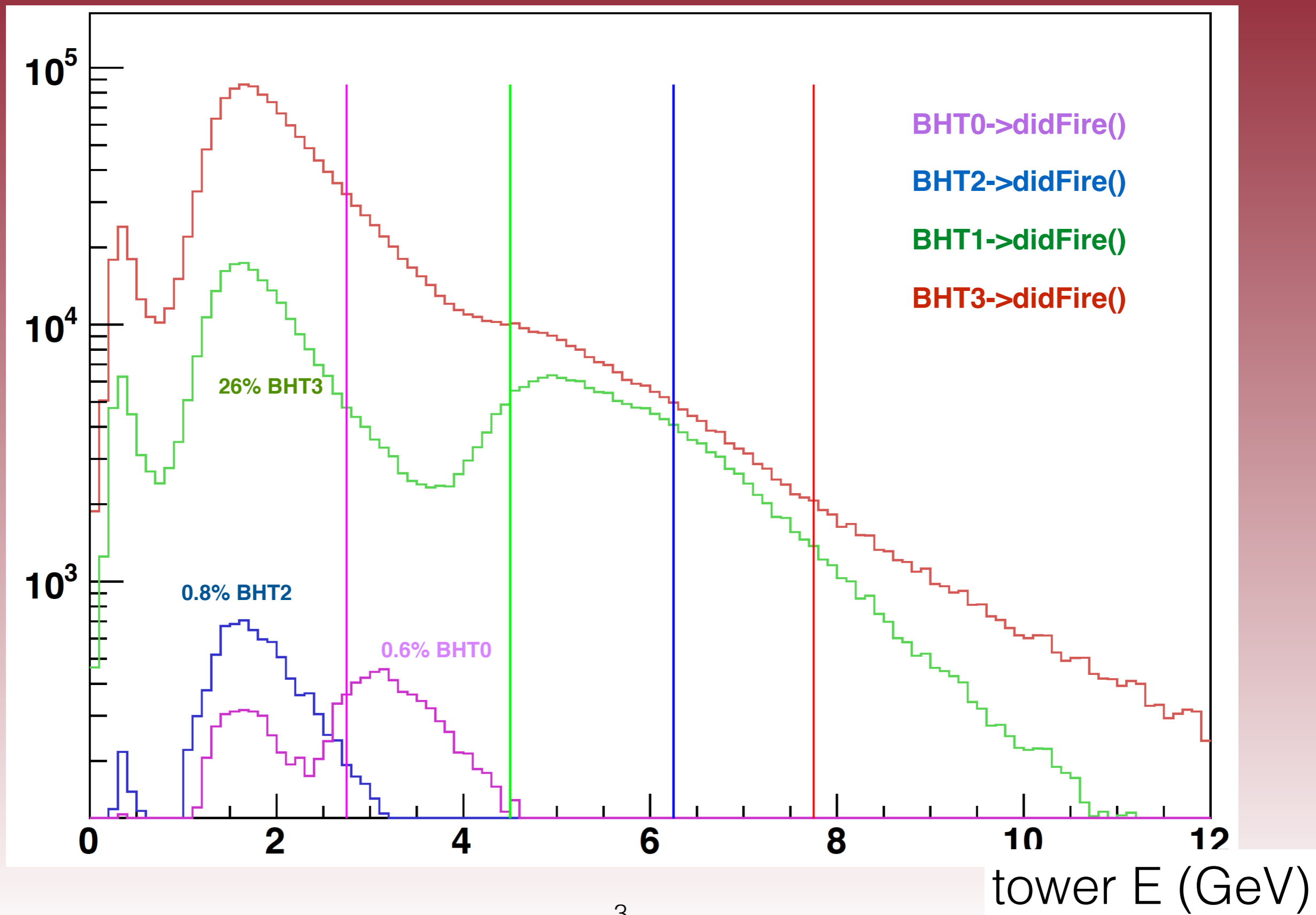
Devika Gunarathne



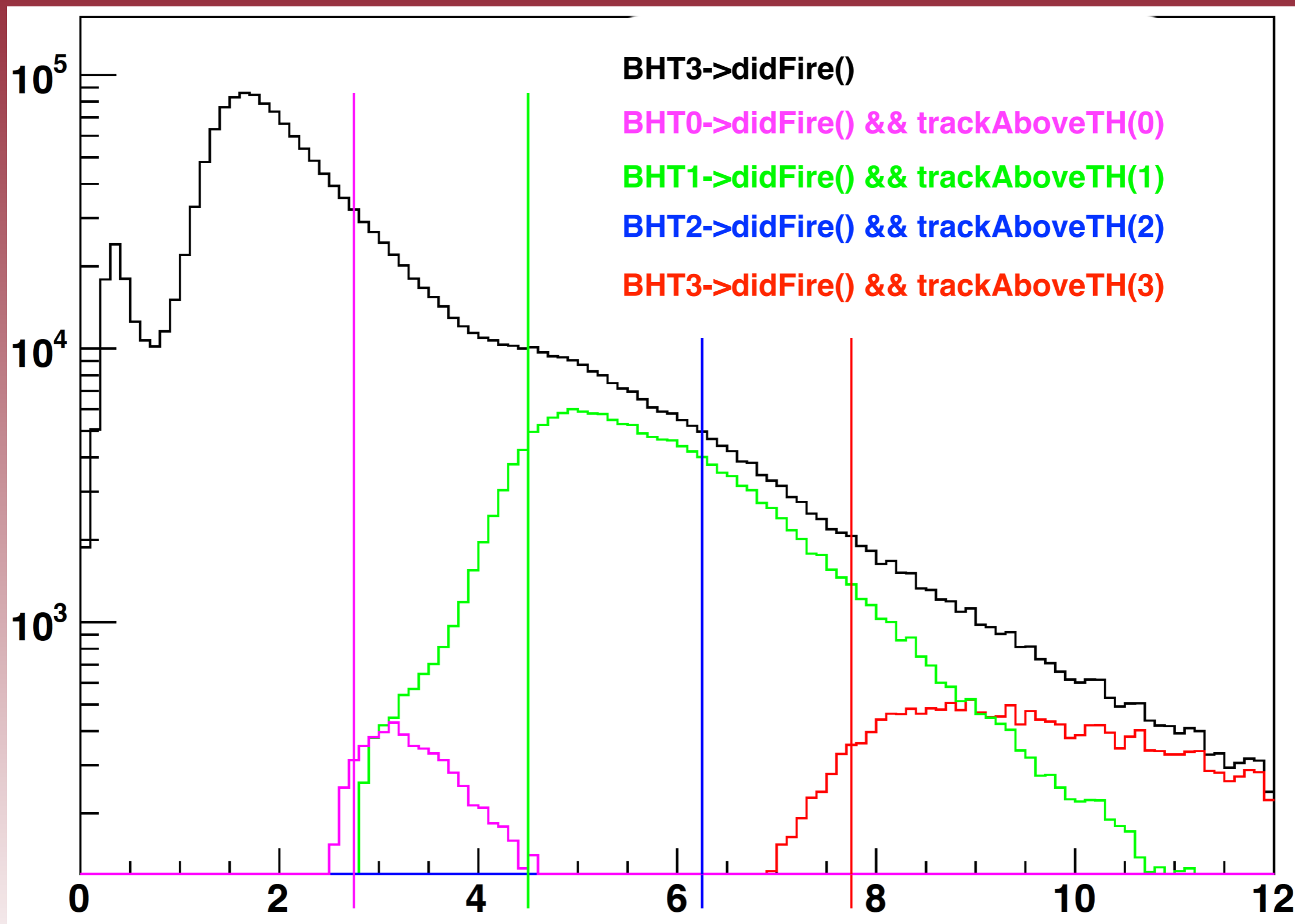
BHT Triggers

	Av_Pre_Scale	Thershold (GeV)	Luminosity (pb-1)
BHT0	759.65	2.75	0.1
BHT1	1.729	4.5	65
BHT2	30.532	6.25	30
BHT3	1.0	7.75	305

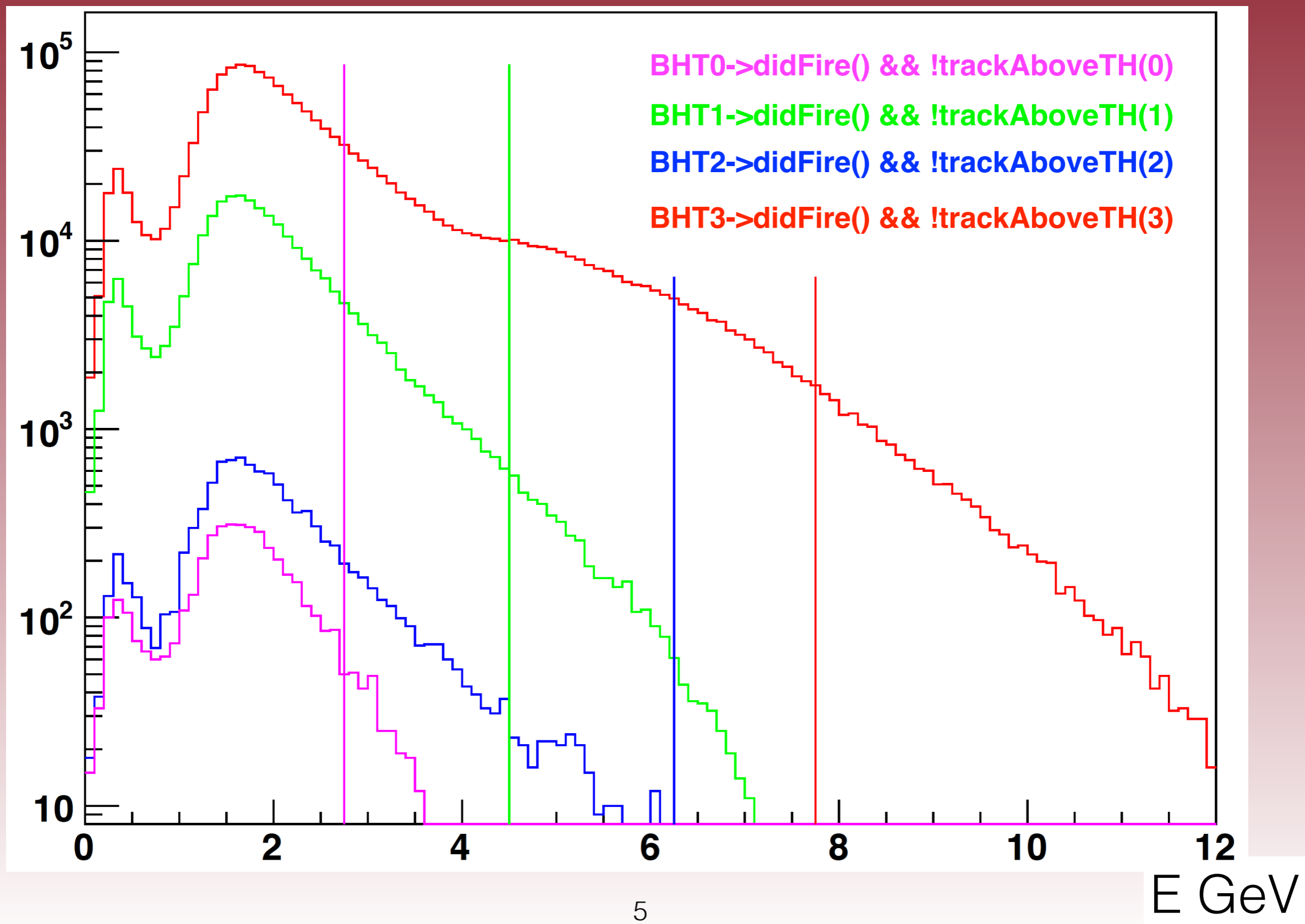
BHT Triggers Statistics : Electron tracks tower Energy Distributions



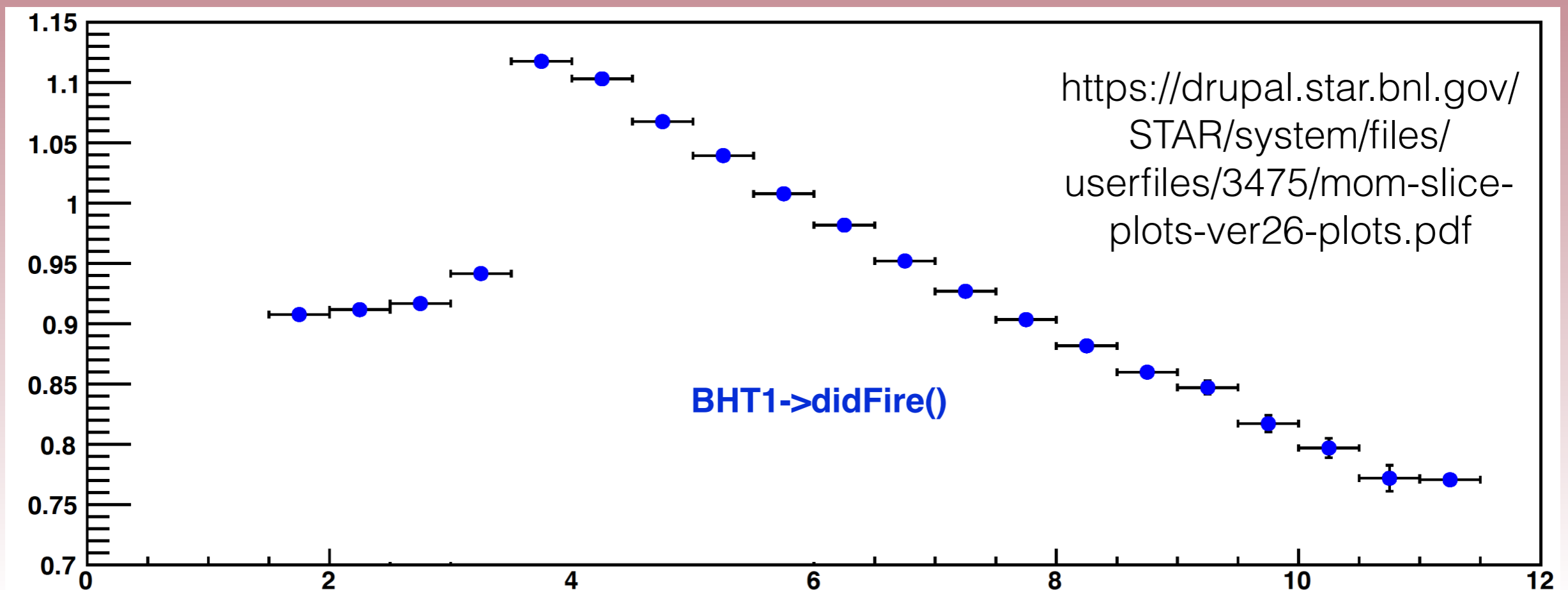
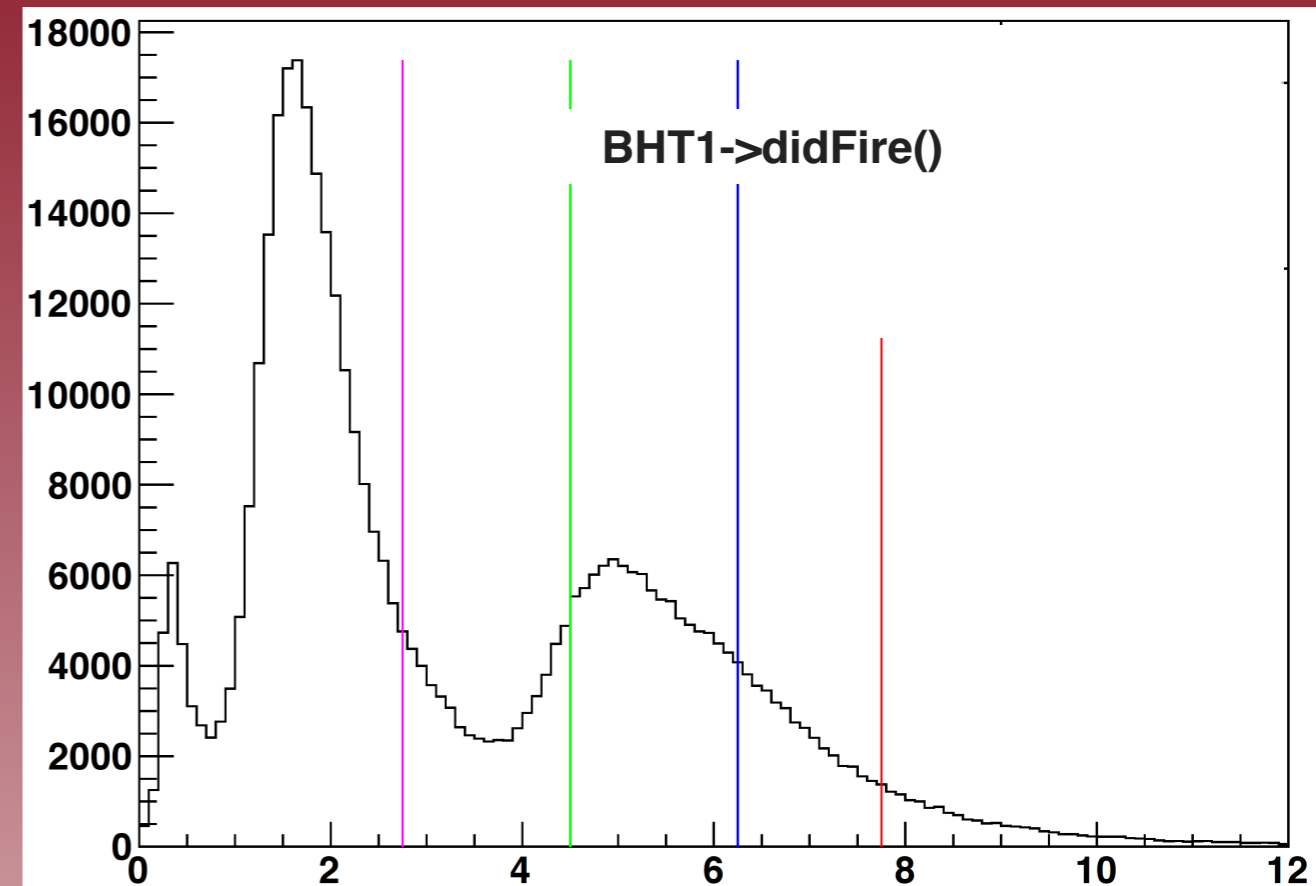
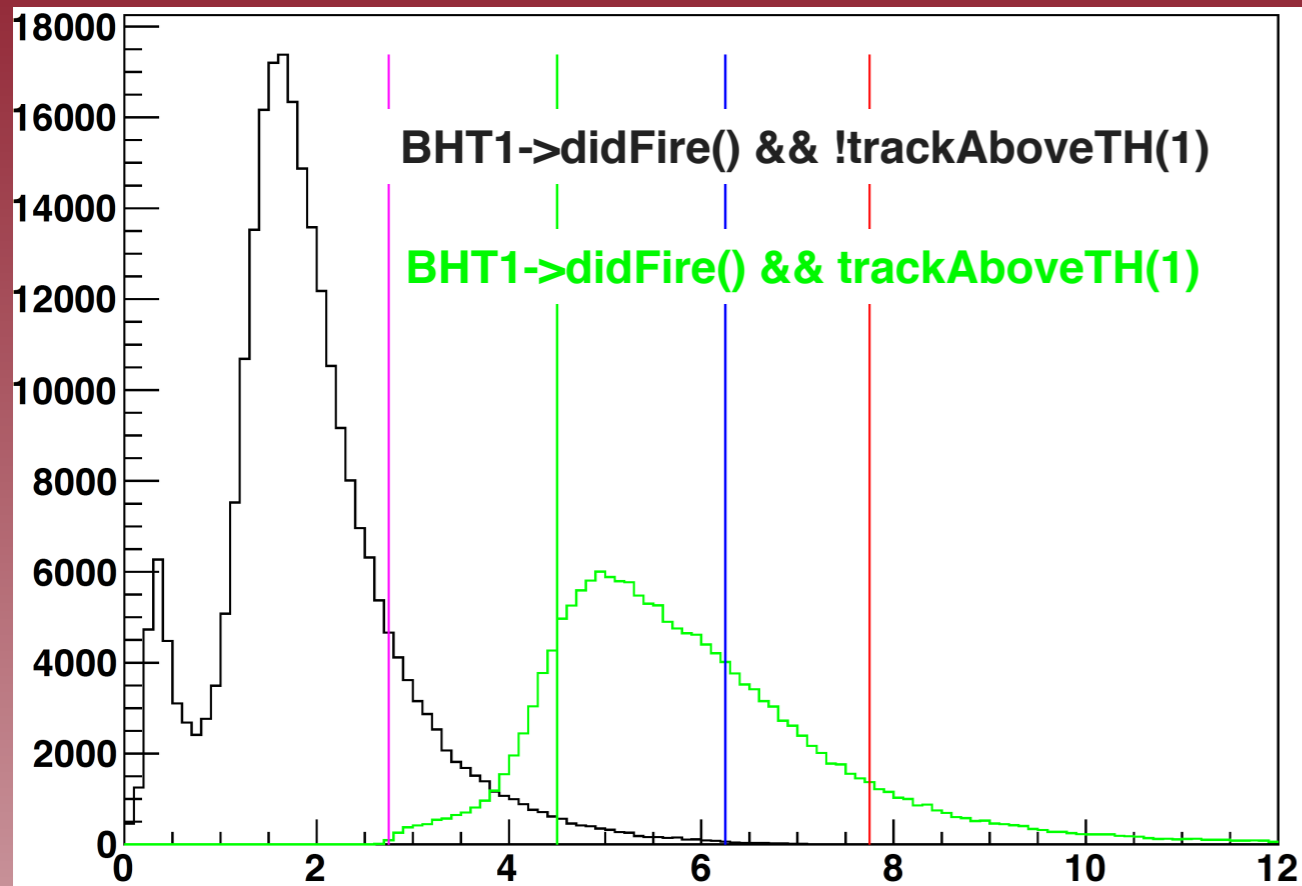
BHT Triggers Statistics : Matched Electron tracks (matched to a tower above threshold) tower Energy Distributions



BHT Triggers Statistics : UnMatched Electron tracks (matched to a tower below threshold) tower Energy Distributions

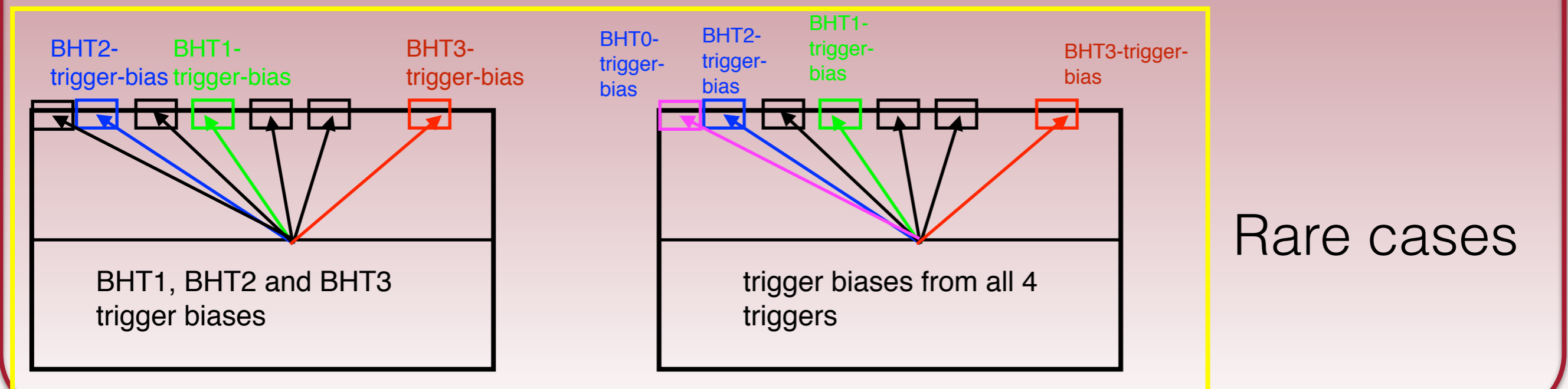
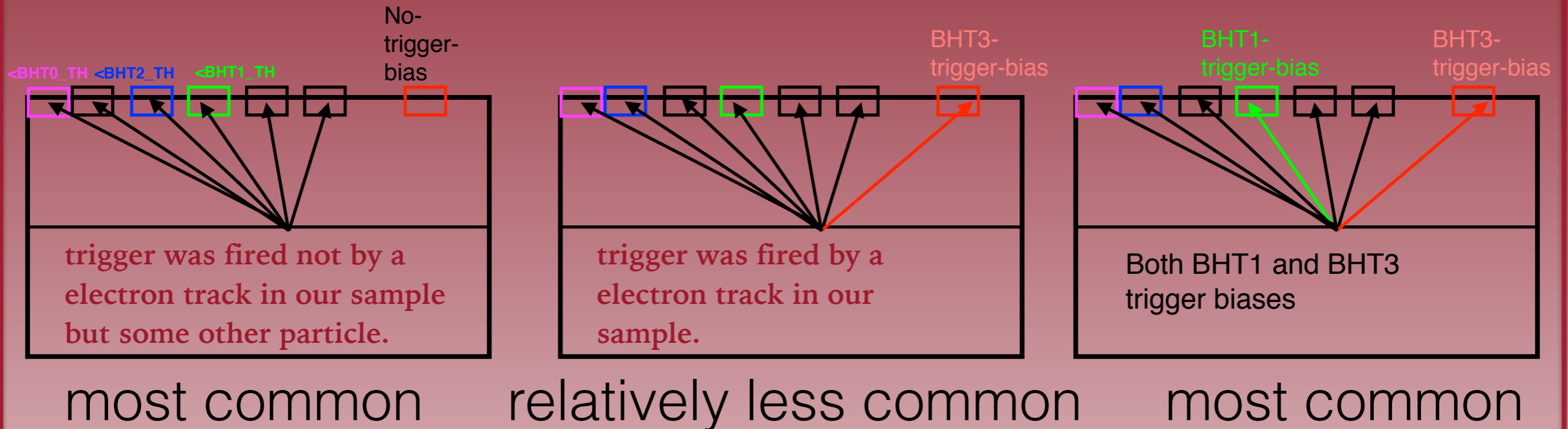


BHT1-triggered events

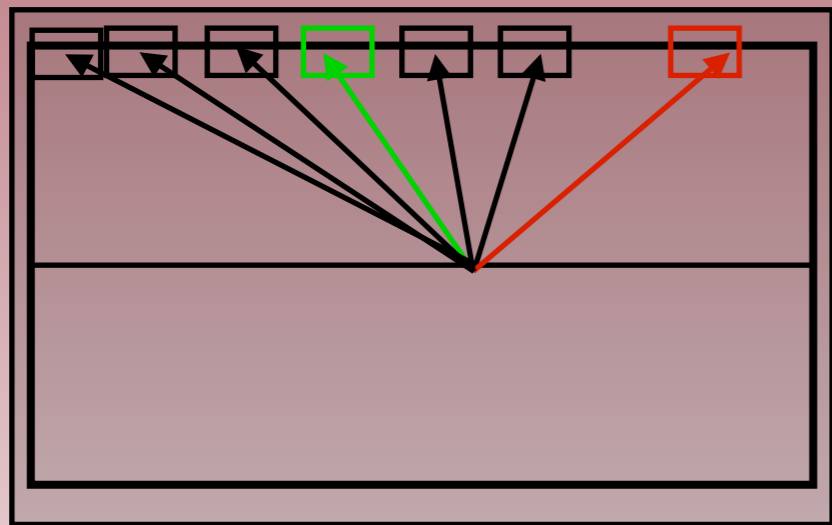
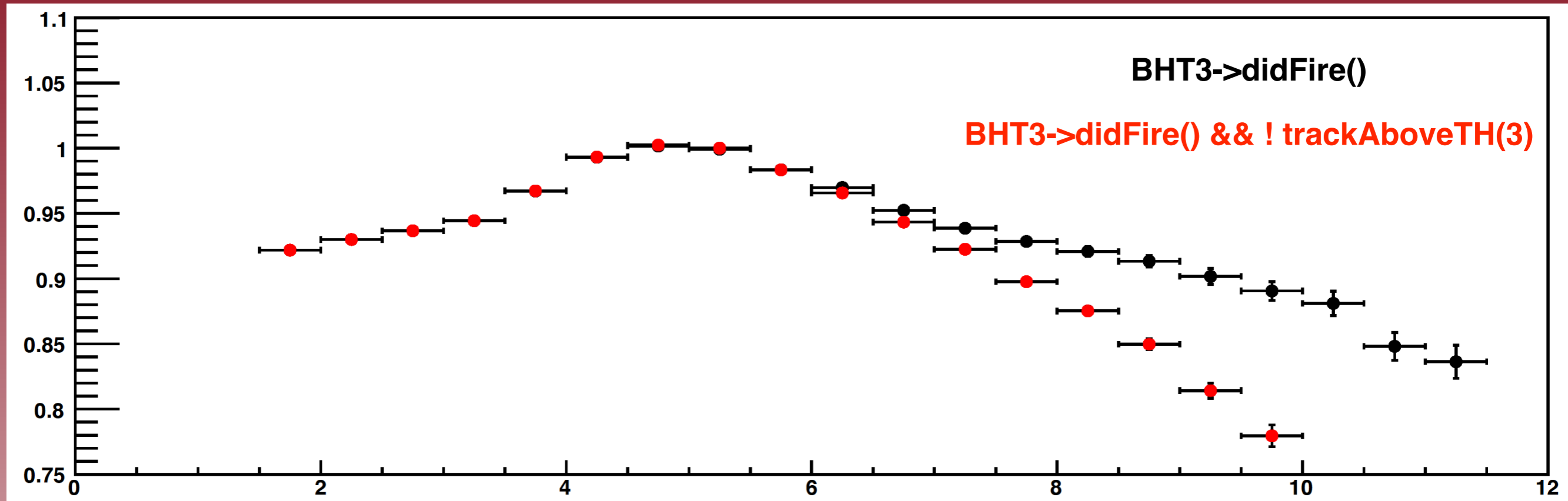


BHT3 Triggered Event

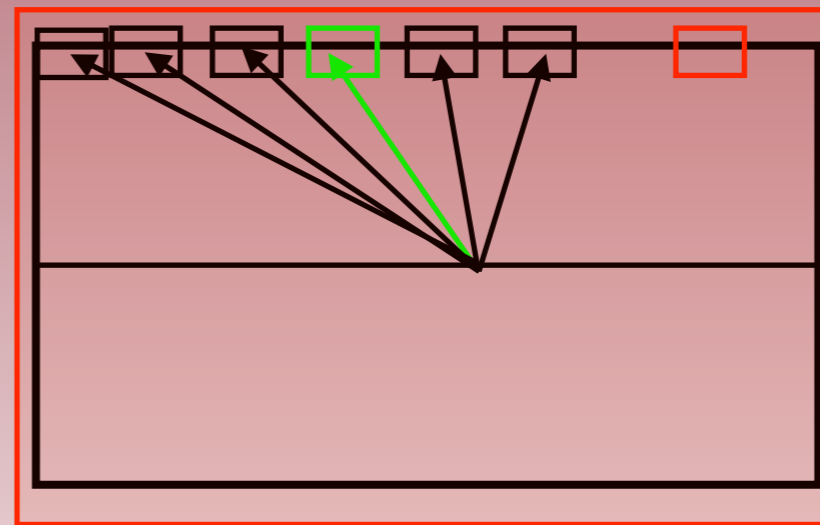
- Consider a **event fired BHT3 trigger** in the calorimeter
- Imagine several e⁺/e⁻ tracks were selected by the tracks cuts



BHT3-Trigger bias in BHT3 triggered events



BHT3->didFire()

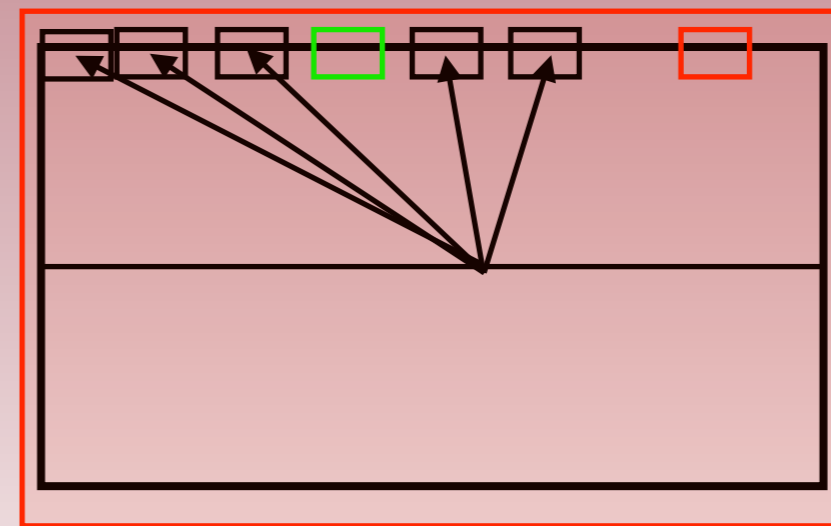
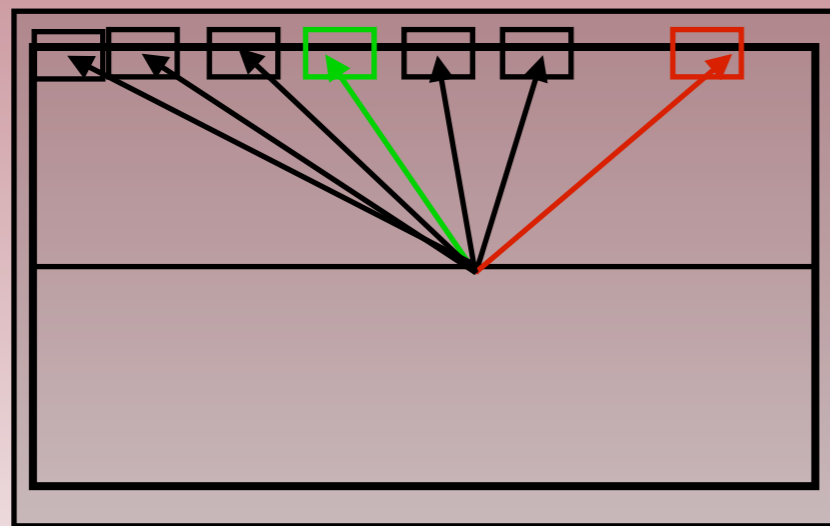
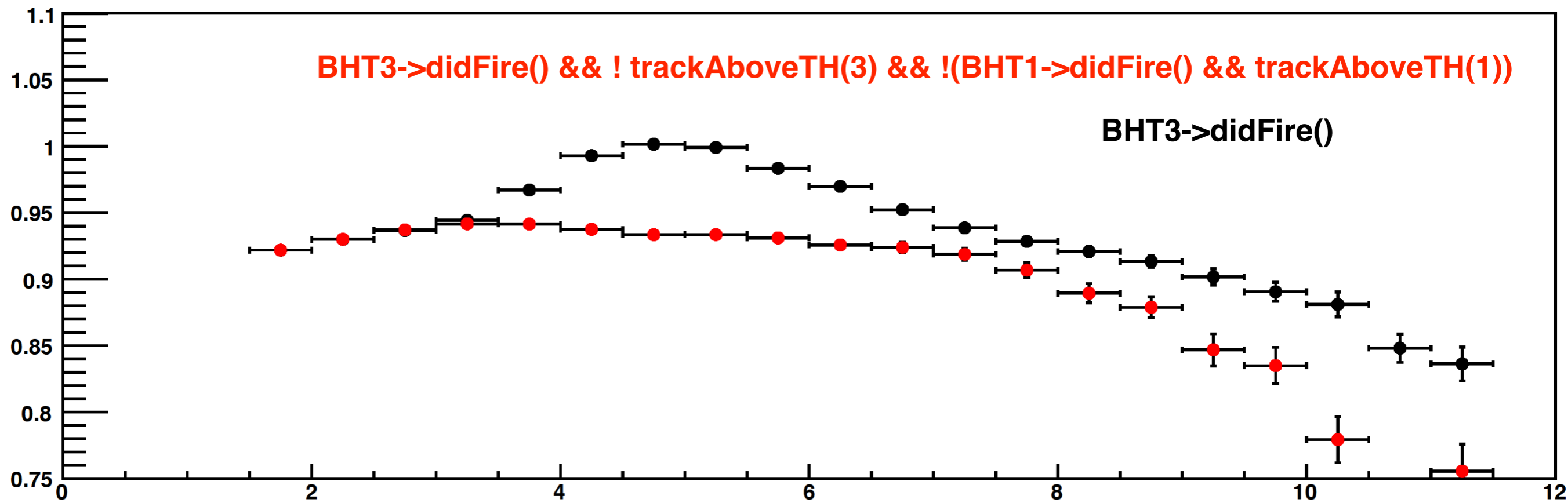


BHT3->didFire() && ! trackAboveTH(3)

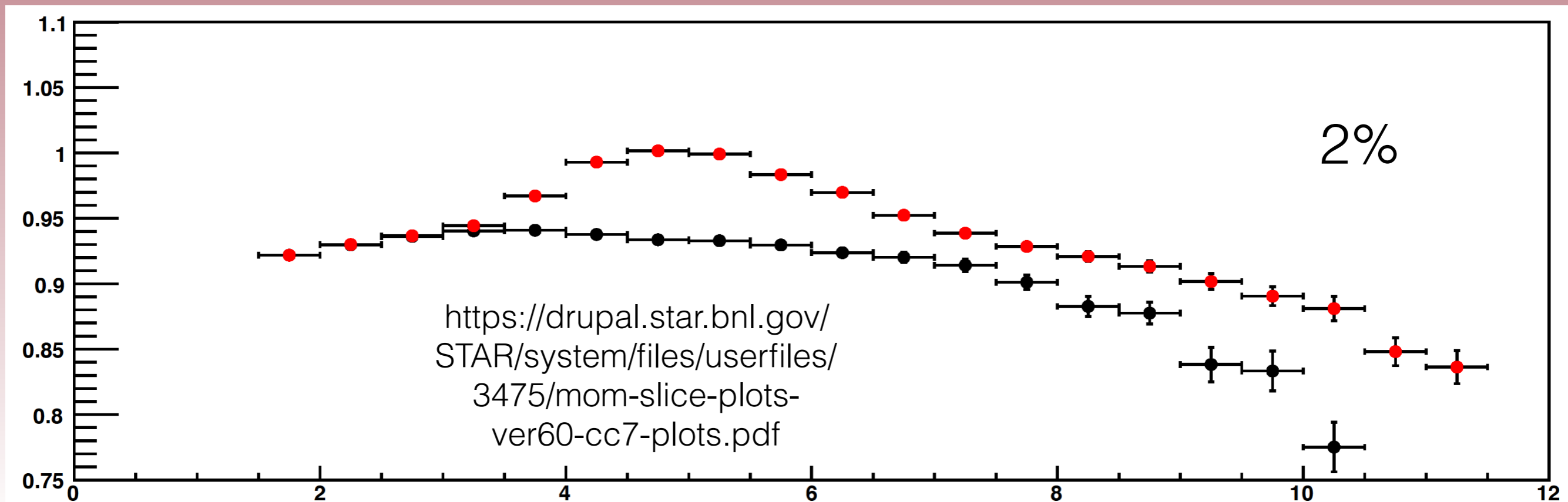
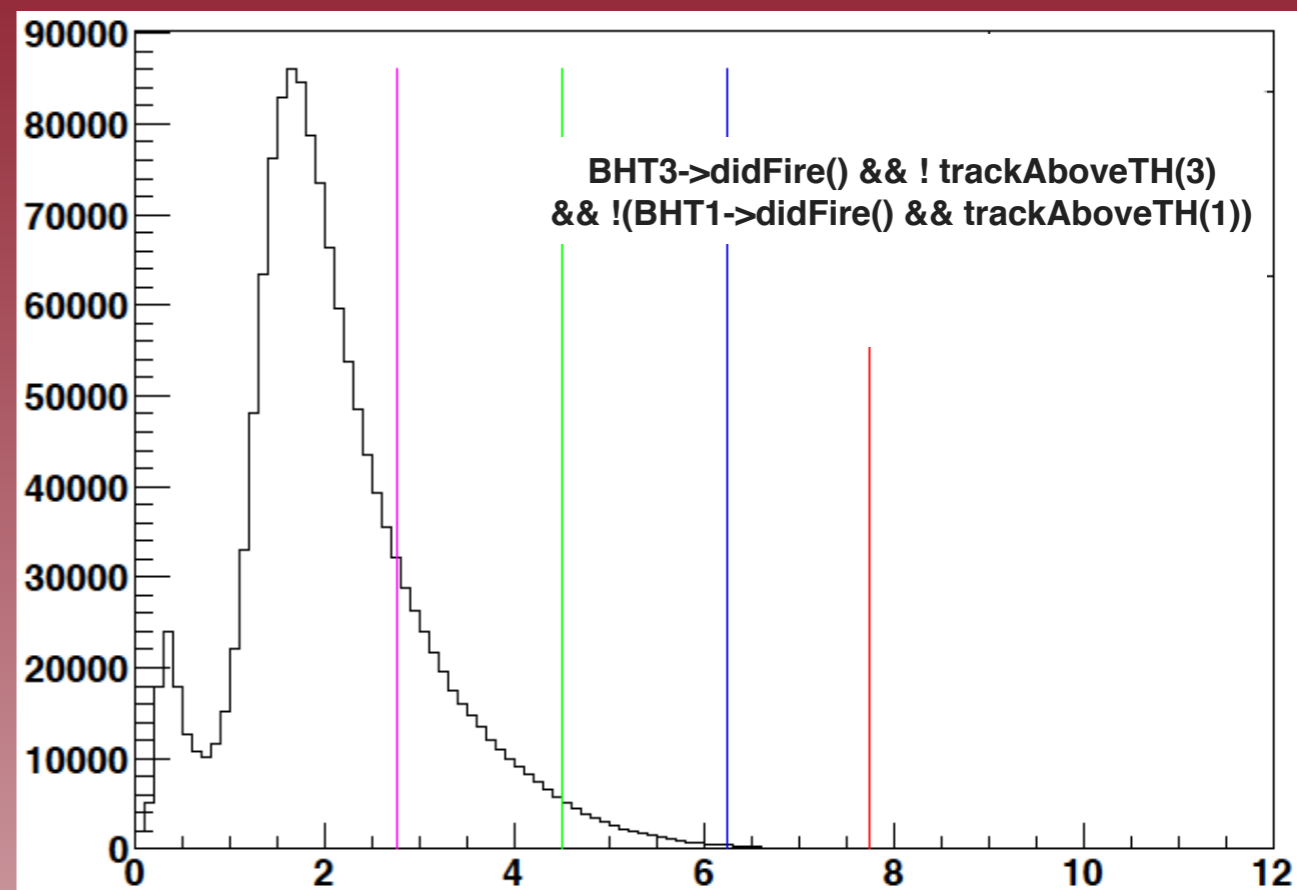
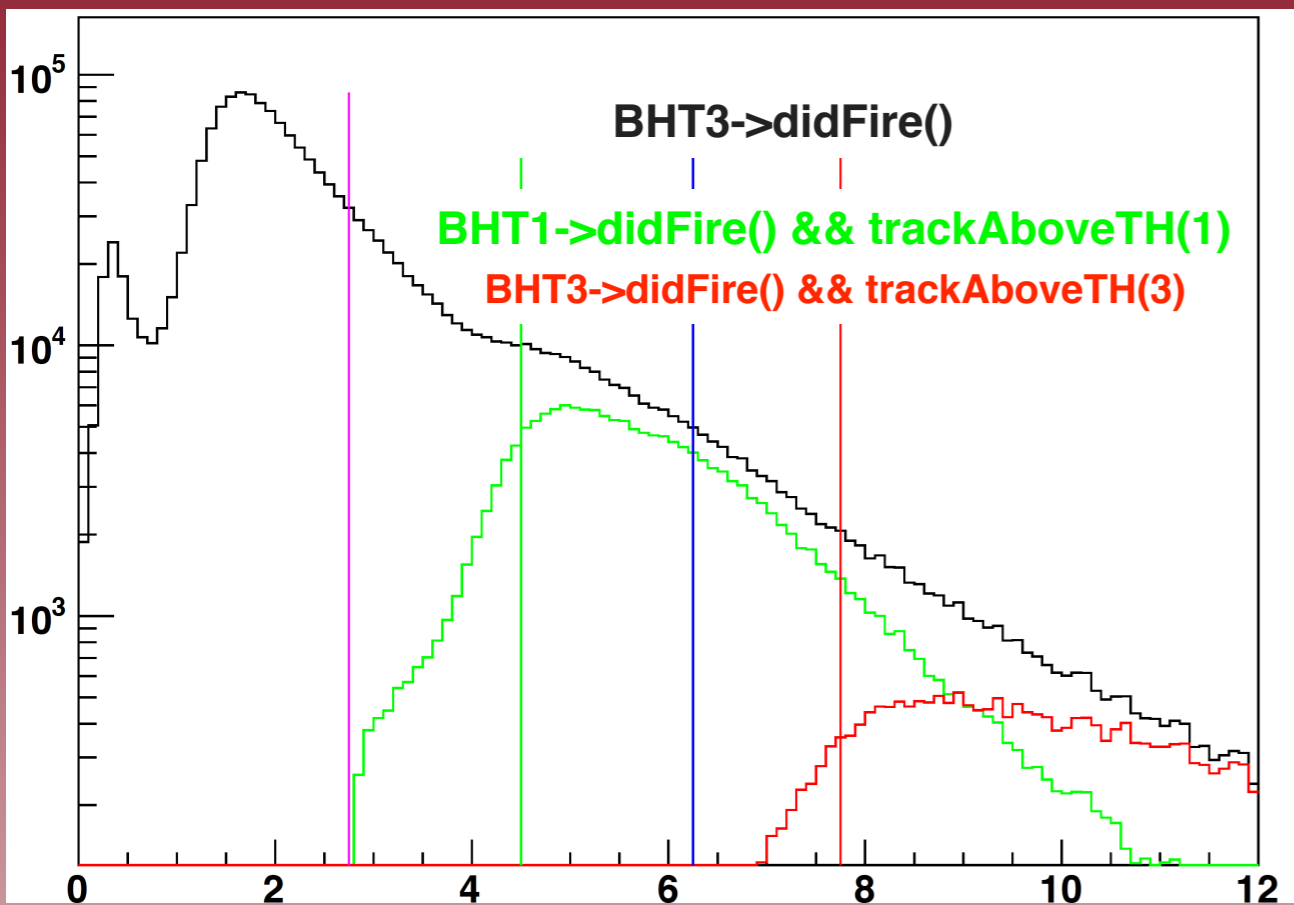
<https://drupal.star.bnl.gov/STAR/system/files/userfiles/3475/mom-slice-plots-ver16-plots.pdf>

<https://drupal.star.bnl.gov/STAR/system/files/userfiles/3475/mom-slice-plots-ver36trg2-plots.pdf>

BHT1 Trigger bias in BHT3 triggered events

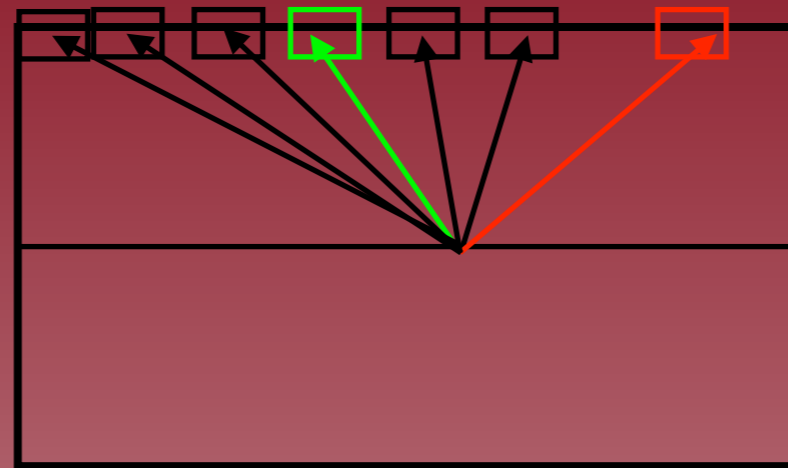


BHT3-triggered events



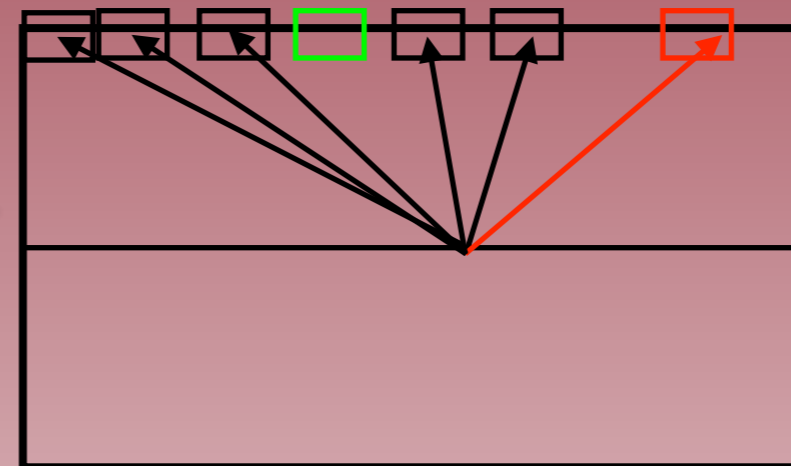
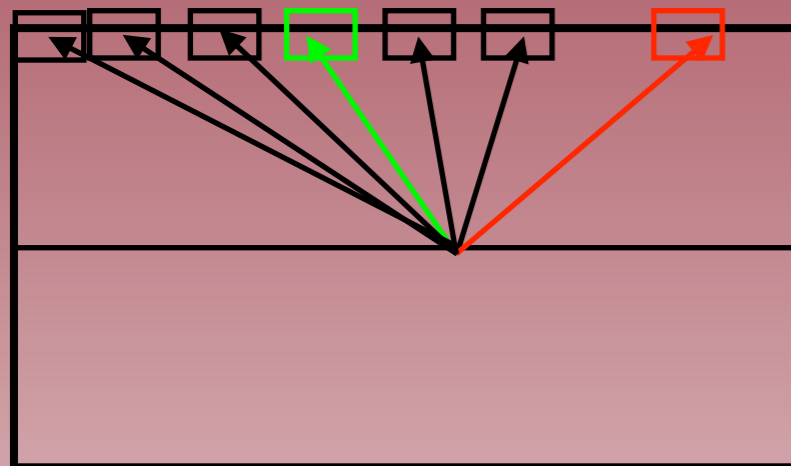
Trigger requirement in the code

BHT3->didFire()



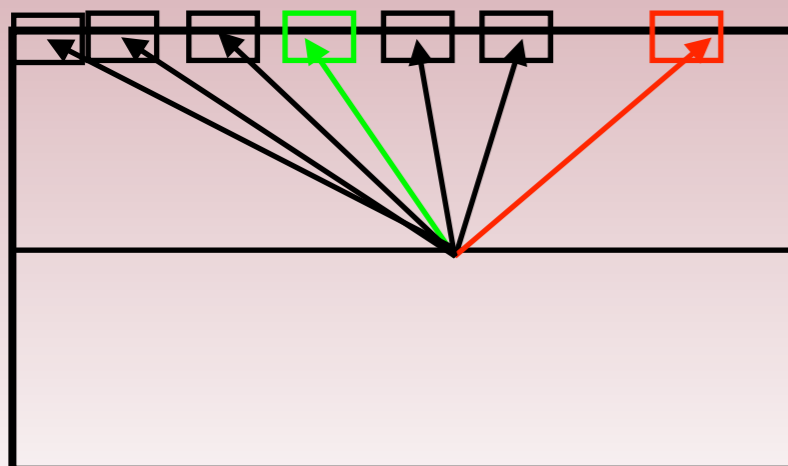
All the tracks in this event will be considered!

BHT3->didFire() && !(BHT1->didFire() && trackAboveTH(1))



All the tracks above BHT1 threshold will not be considered!

BHT3->didFire() && !(BHT1->didFire())



This whole event will not be considered!

title

