Subject: ELoss cuts in straw tubes
Posted by StefanoSpataro on Fri, 08 Feb 2013 16:45:09 GMT
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Dear all,
I did a check on the straw tube occupancy, in order to understand if a cut on a minimum energy loss value (i.e. 20 eV) could affect (and how) the rates.
This is due to the fact that in simulation the energy loss in straw tubes can assume also very low values, few eV, where in theory no electronic signal should be created.

For this check I simulated 10k DPM events at 15 GeV/c, full setup, and checked the tube ID distribution of the points with eloss < 20 eV, separately for STT and FTS:

STT

FTS

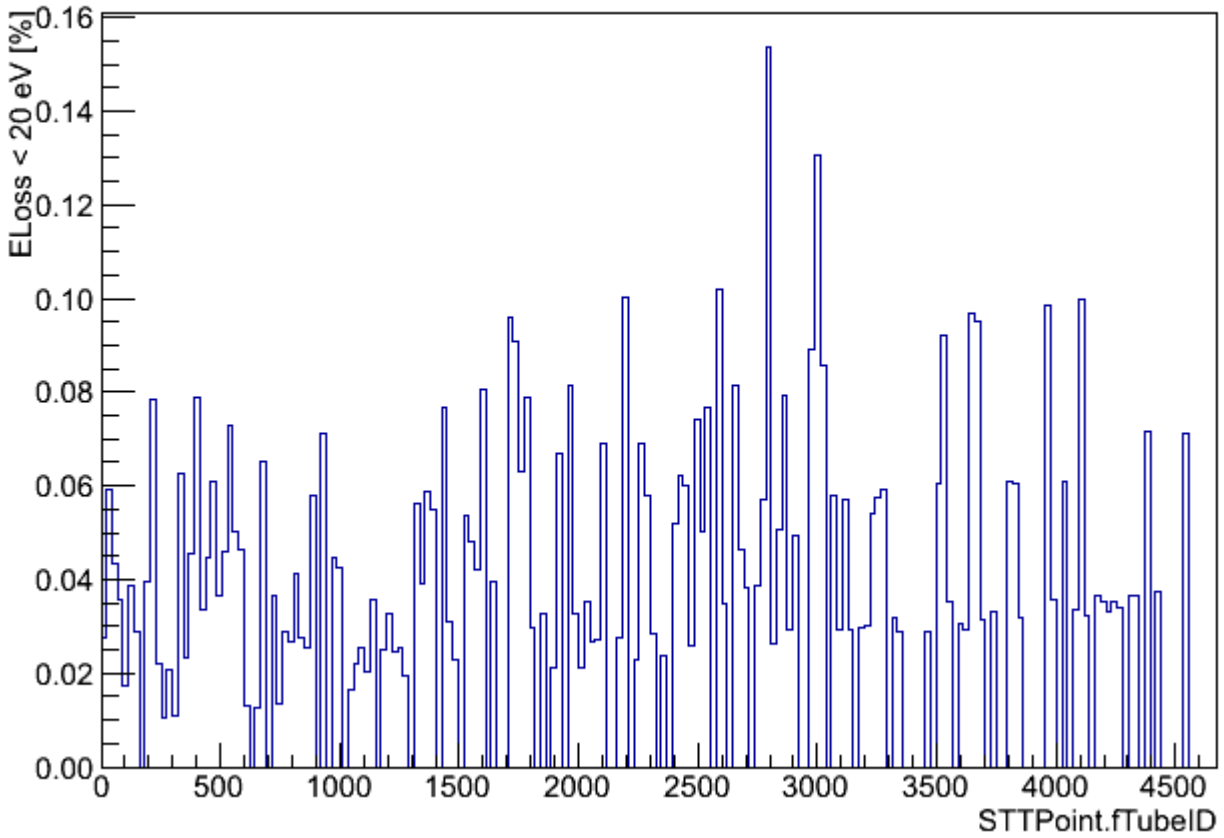
On Y axis you can see the fraction of points with eloss < 20 eV divided by the total amount of points, in percentage.

You can see that while for the barrel the "fake" ratio is well below 0.1%, in forward (most probably due to more material around) the ratio reaches 0.5%.

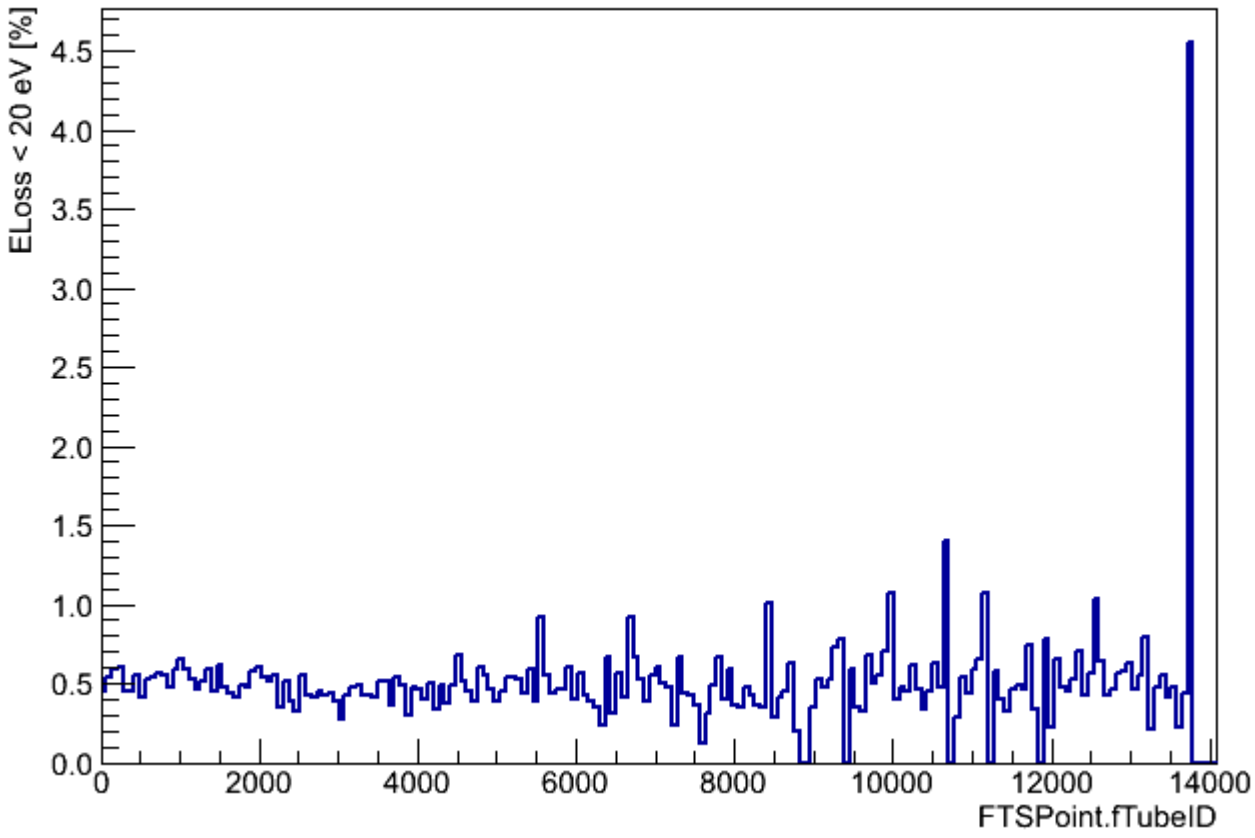
Just for your information.

File Attachments

1) stt_eloss.gif, downloaded 1336 times



2) fts_eloss.gif, downloaded 1399 times



Subject: Re: ELoss cuts in straw tubes
Posted by MartinJGaluska on Wed, 13 Feb 2013 11:58:25 GMT
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Thank you Stefano. Can you explain why the FTS distribution seems to have a peak at very high tubeIDs?

Subject: Re: ELoss cuts in straw tubes
Posted by StefanoSpataro on Wed, 13 Feb 2013 12:26:48 GMT
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Most probably you have too low statistics and to high obscillations on a well defined tube.