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Bender F.A.Q.

This page will be populated with Frequently Asked Questions concerning Bender [project](#).

Add your own Question

Did you not find the answer you were looking for? If not please submit your question here.

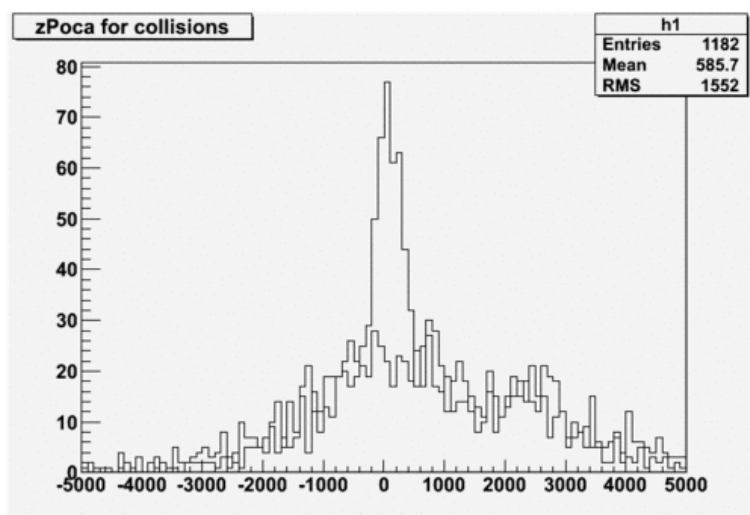
Current user-submitted FAQ's can be found here

Can Bender be used for analysis of REAL data ?

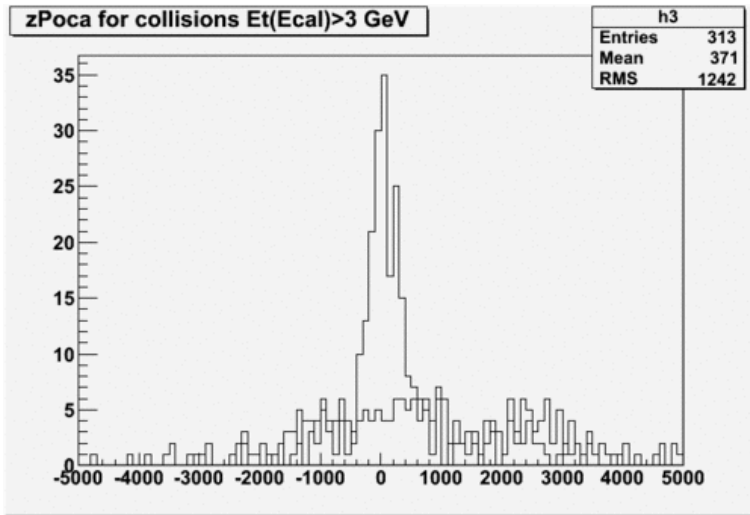
Yes! From the version v12r5 [Bender](#) really can be used for analysis of real data!

Beam-Gas events versus pp-Collisions

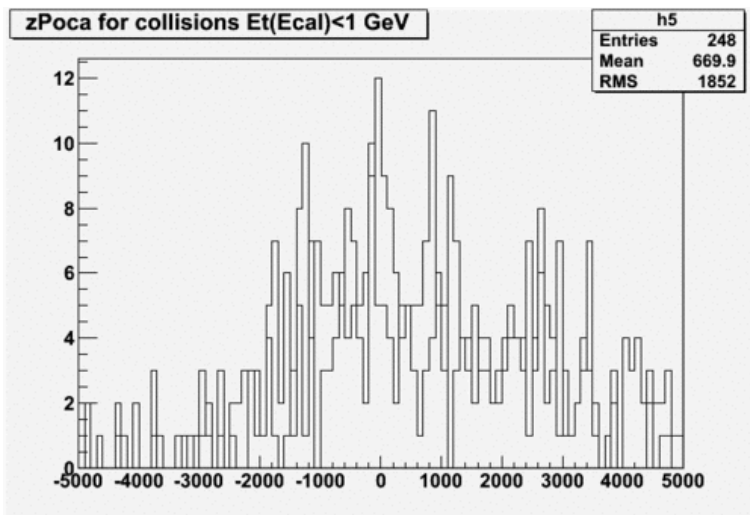
The script FirstRealData.py demonstrates that the summed transverse energy in Ecal allows to discriminate beam-gas events with respect to events with pp-collision. E.g. the plot shows "zPoca" distributions for Collision/BeamGas events (similar to the original plots by Wouter & Juan):



The same distribution for events with $\sum_i E^T \geq 3 \text{ GeV}$: one clearly sees the reduction of 'beam-gas' component:

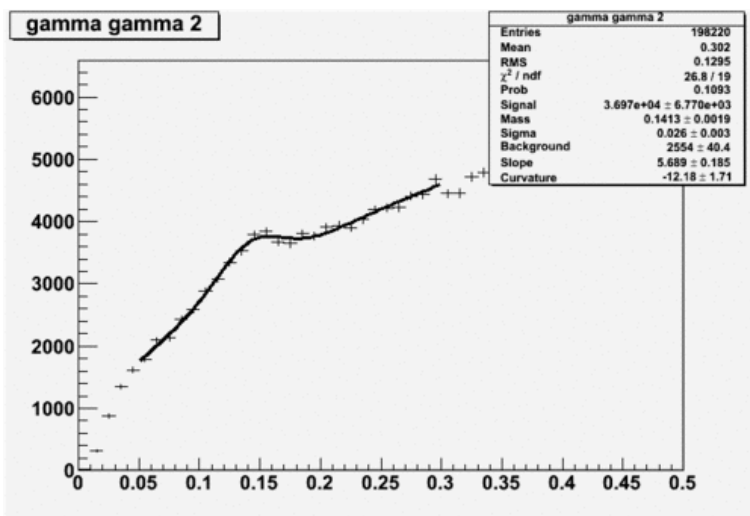


The same distribution for events with $\Sigma_i E^T \leq 1 \text{ GeV}$: one clearly sees the reduction of 'collision' component:

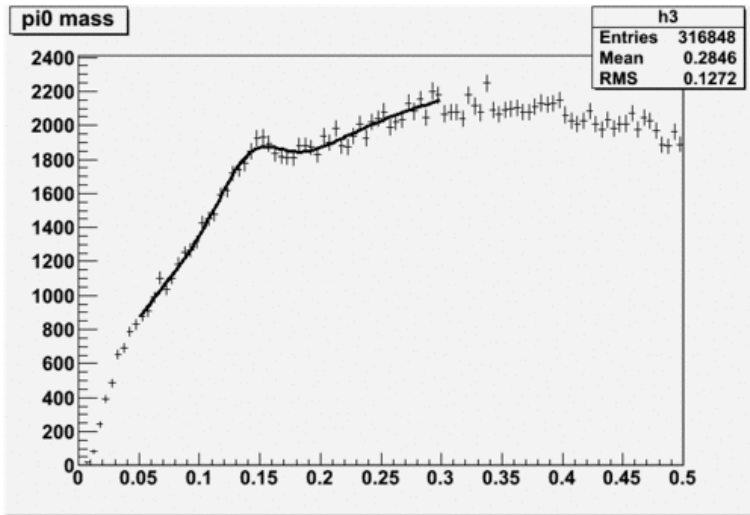


Real $\pi^0 \rightarrow \gamma\gamma$

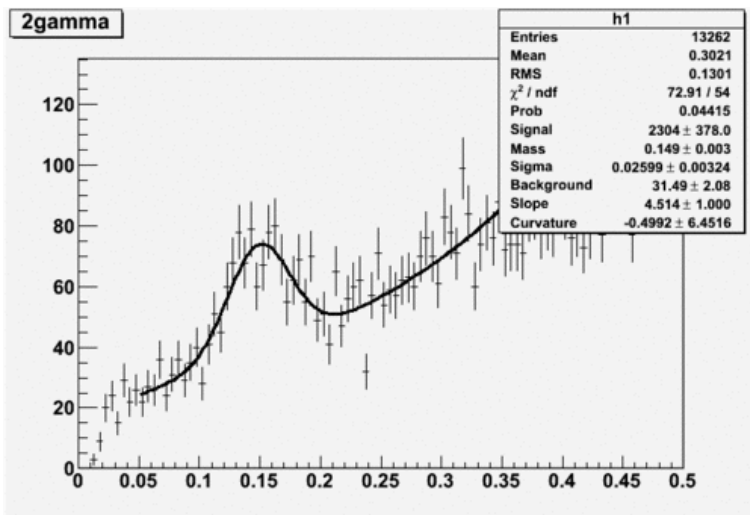
Using the attached Bender script RealPi0.py one can easily produce the plot for "the first real π^0 ":



Add a cut on the transverse momentum:

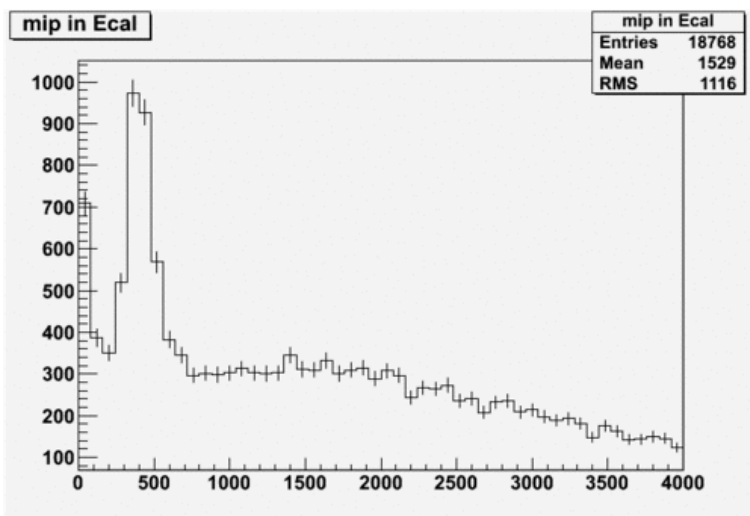


Use Spd/Prs information (no Spd hits, and require some energy Prs):



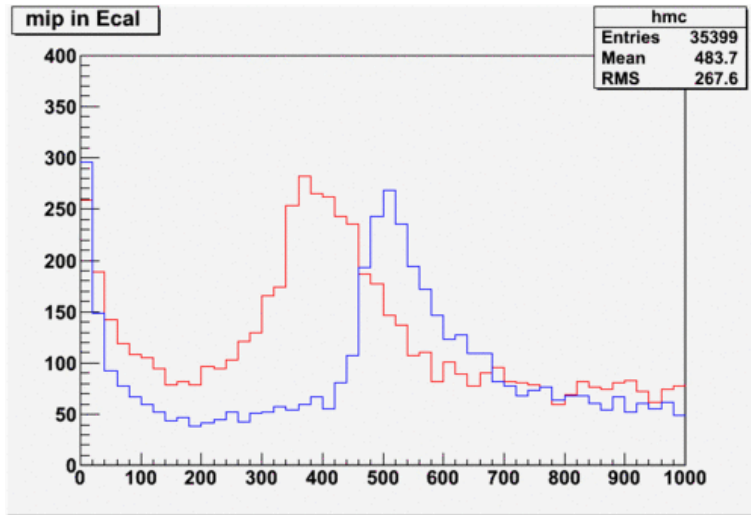
Real mip peak

Using the attached Bender script RealMip.py one can easily produce the plot for "mip signal in Ecal" :



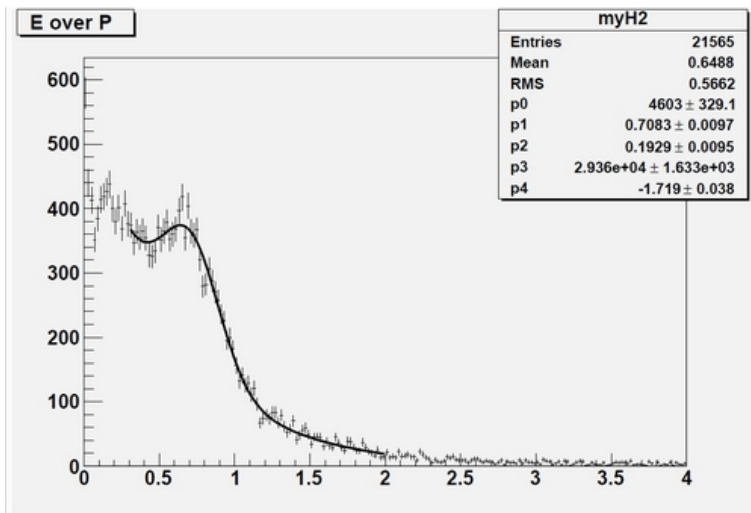
Changing the scale and adding comparison with Monte Carlo for 450 GeV pp-collisions (BLUE histogram) one gets the following plot, where data correspond to RED histogram:

Real

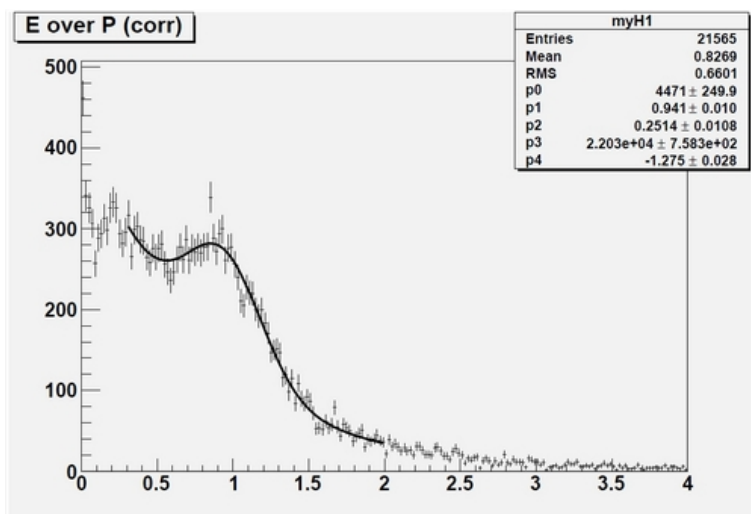


E/P in Ecal

The same Bender script RealMip.py can be used to produce E/P-ratio for tracks (thanks to Victor Egorychev):



The "bump" sits at ~ 0.71 , but if one re-uses the scaling coefficient from the previous plot (the ratio of mip-peaks in DATA/MC) one gets following "energy corrected" plot:, where the bump sits at ~ 0.94 :



-- Vanya Belyaev - 26-Nov-2009

Real mip peak

This topic: LHCb/FAQ > BenderFAQ

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