Fixes of the data simulation
May 2018 data

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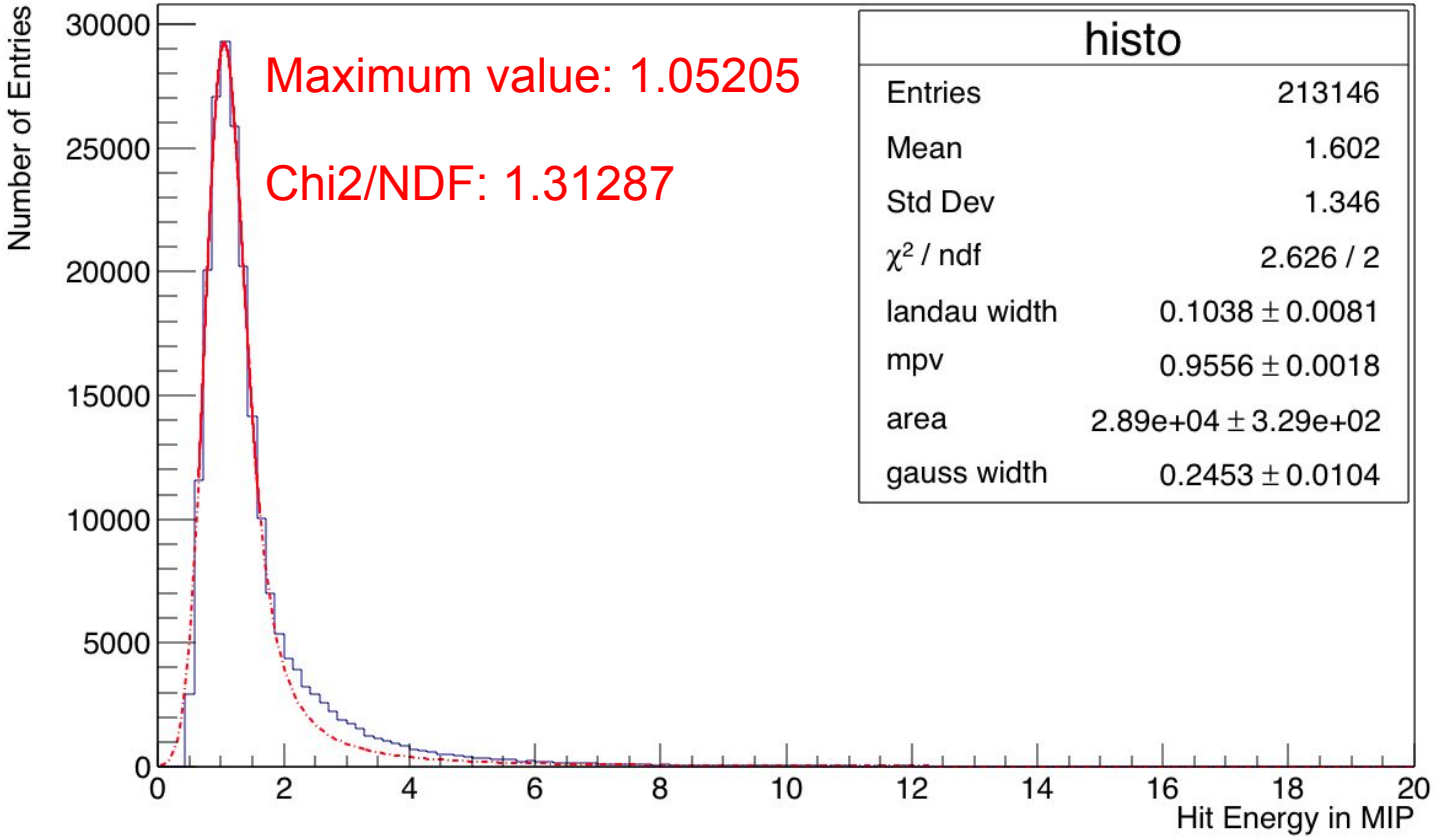
Simulation fixes

- Problems:
  - 40 layers in simulation
  - MIP peak shifted to above 1
- Solutions:
  - Fixing the number of layers in TestBeamSetup_HCAL.xml file: To be checked!
  - Using the MIP calibration fit to adapt the MIP peak position (using 40 GeV muons): This talk

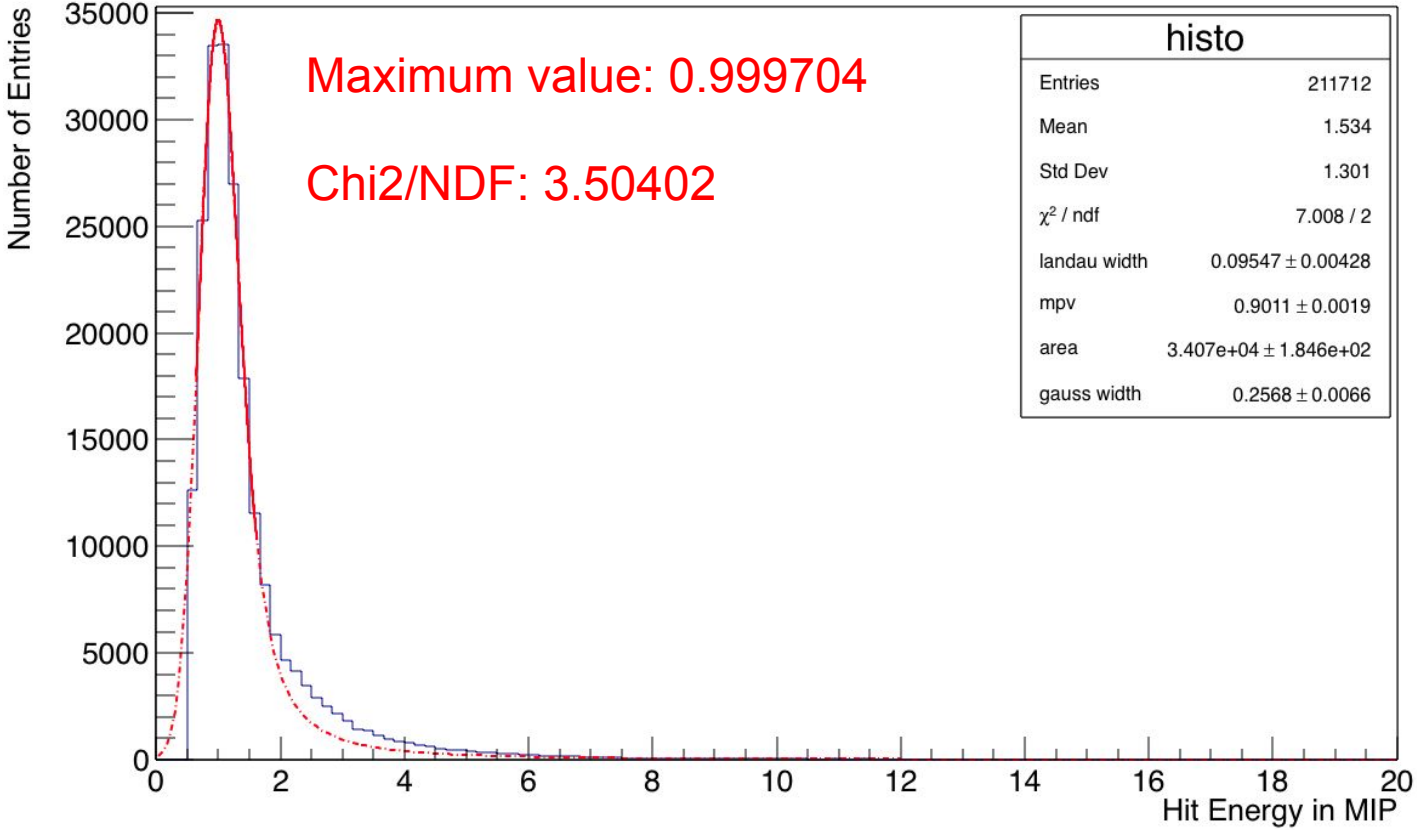
Fitting the “old” MC data



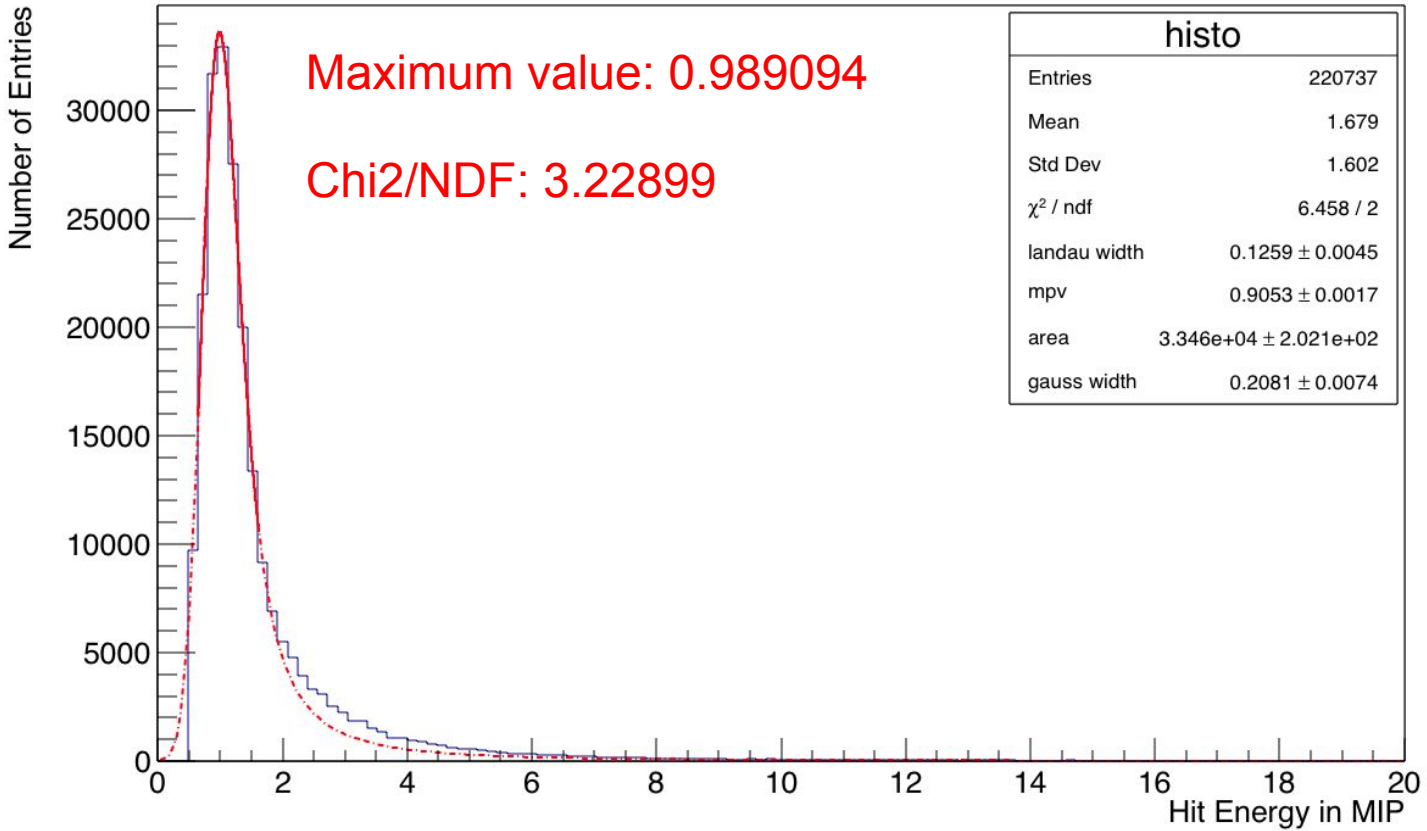
Adapting the MIP2GeV factor

- Multiplying the MIP2GeV conversion factor in the Digitisation with the peak position value from the fit extracted from 40 GeV muon simulated data

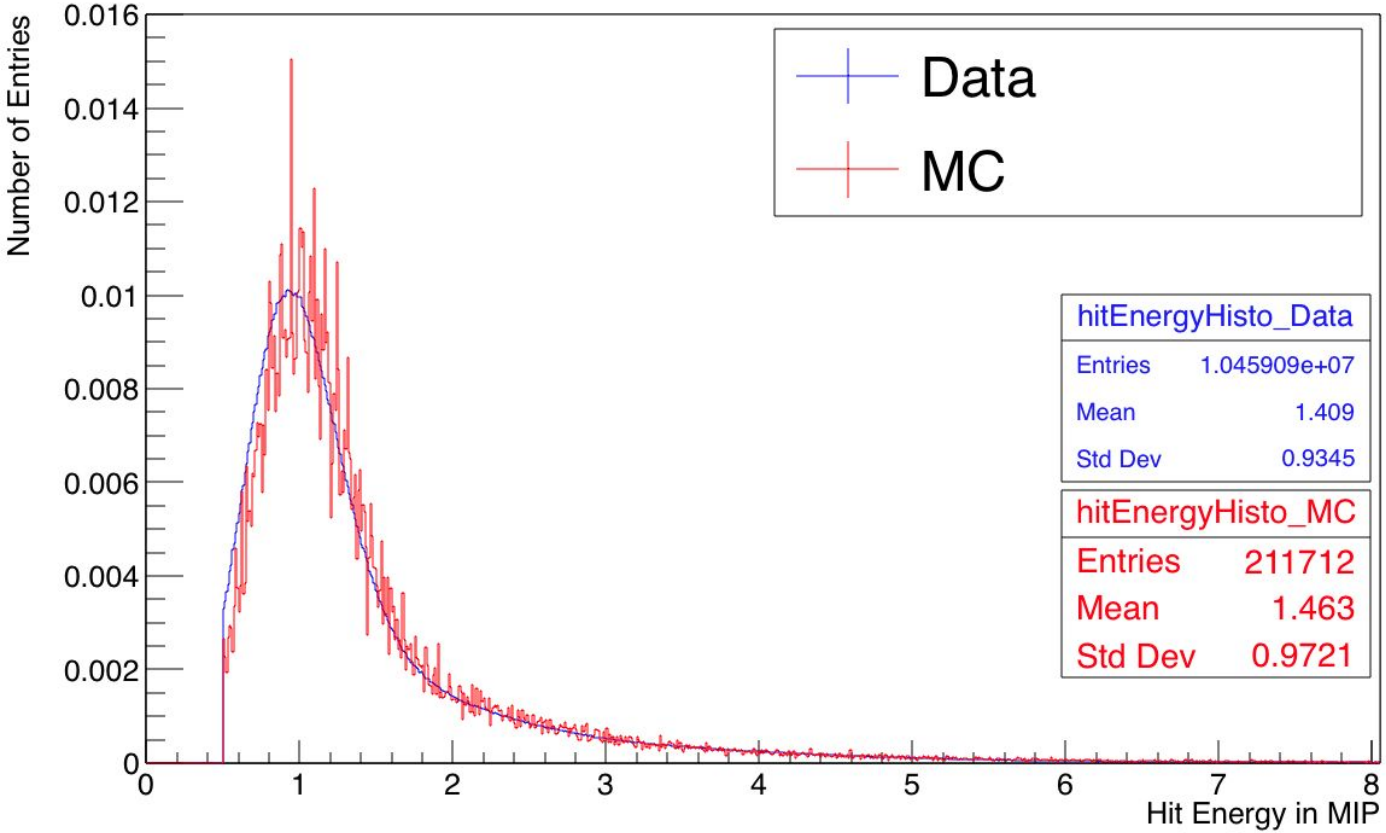
Fitting the adapted data



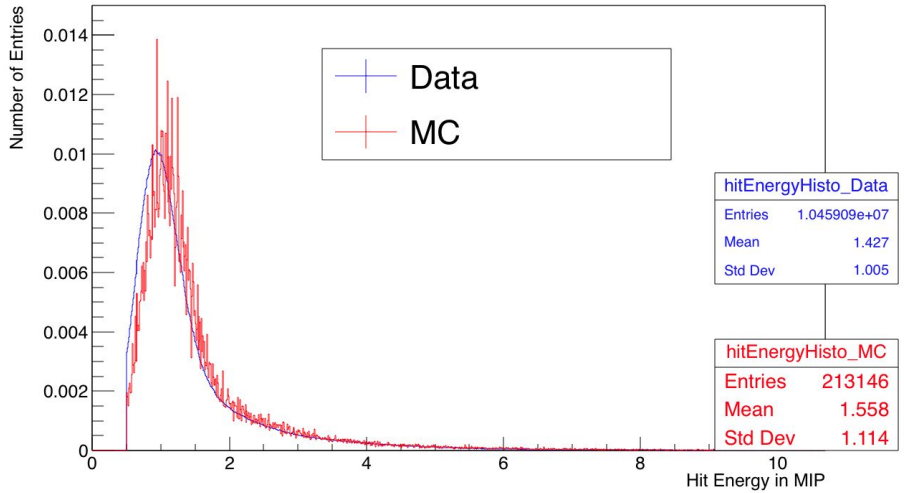
Cross-check with 120GeV

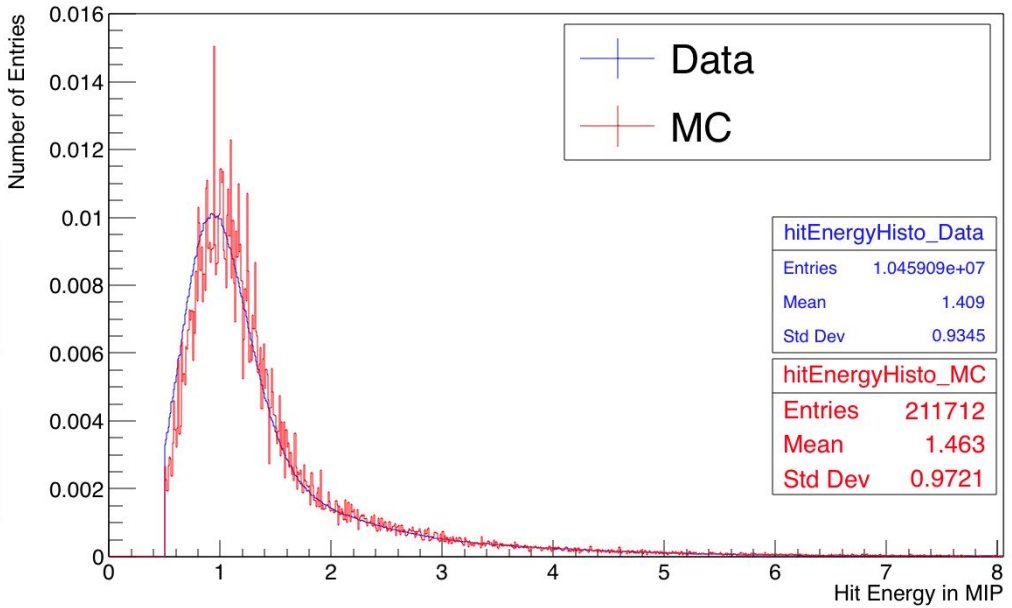


Comparison of Data and MC



Before and after





Next steps

- Check muons simulated with 38 layers: Condor problems
- Look at simulated pion data
  - Compare to test beam data
  - Check for linearity etc.
- Repeat for June data

Also going on:

- The documentation of the RootTreeWriter variables on Confluence is done
  - Including LaTeX equations
- https://confluence.desy.de/display/Calice/RootTreeWriter
- Layer-wise variables do not yet have equations
  - Simply replaces event variables by per-layer variables
- BIF and time variables to be checked or done by experts