

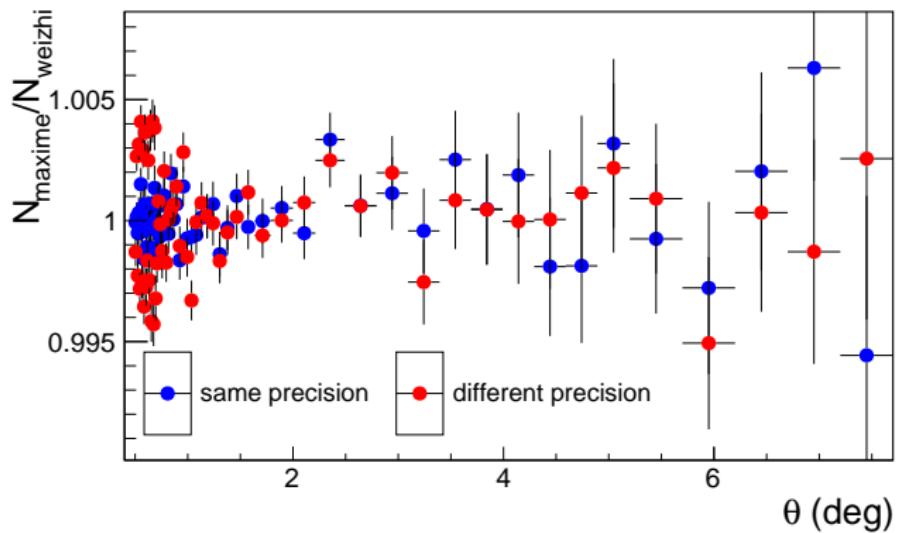
Weizhi/Maxime ESEPP Simulation Comparison for 2GeV

Maxime Levillain

July 21, 2017

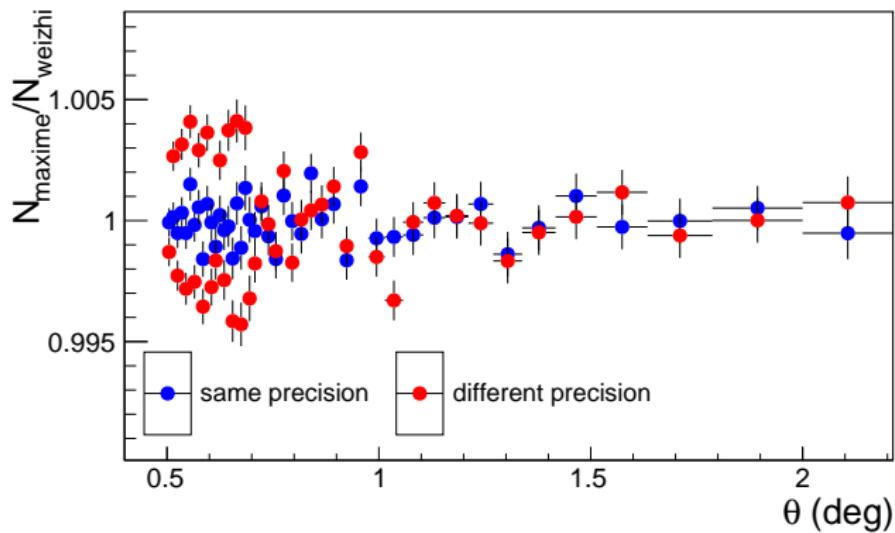


Effect of different precisions



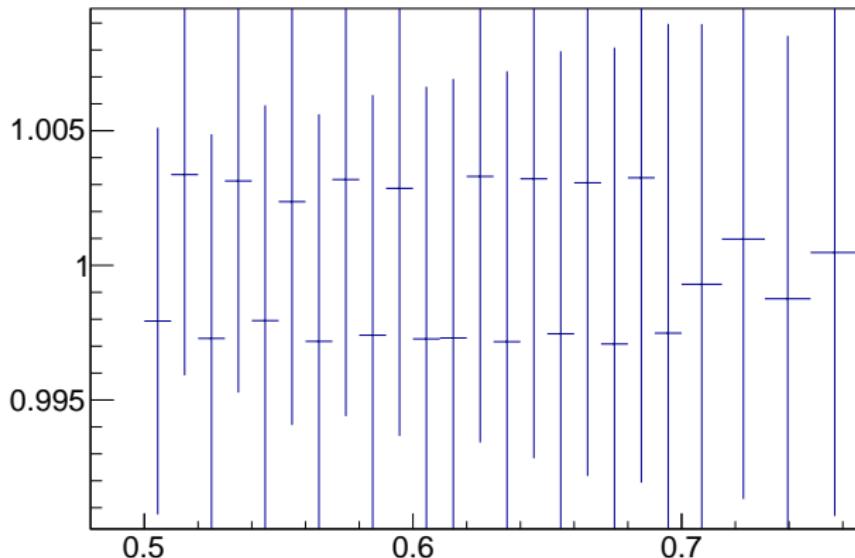
- ▶ Different precision causes instability in yield
- ▶ Bad coupling between random generator/rounding/binning

Effect of different precisions



- ▶ Different precision causes instability in yield
- ▶ Bad coupling between random generator/rounding/binning

Effect of different precisions



- ▶ Same jumping patterns using the same seed with different precisions

Search in random systematics effects in generated PR^{ton}_{radius}

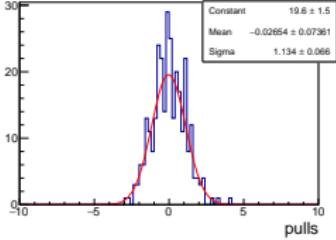
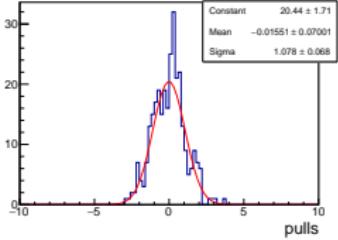
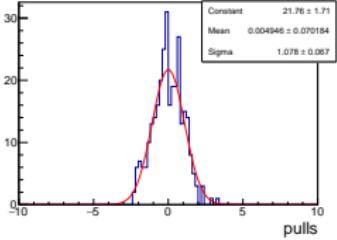
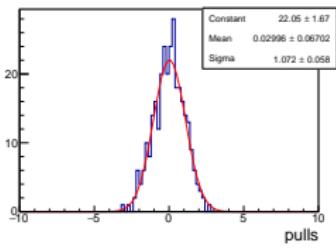
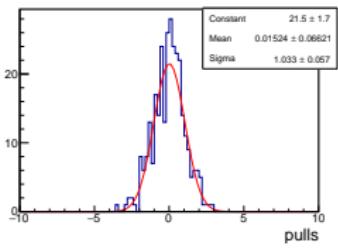
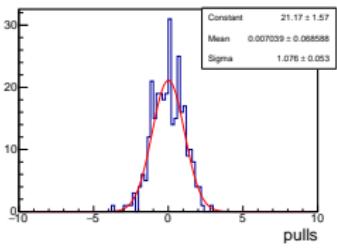
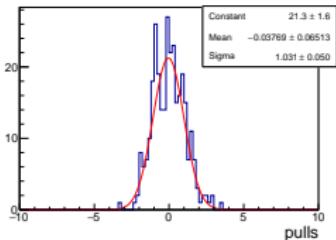
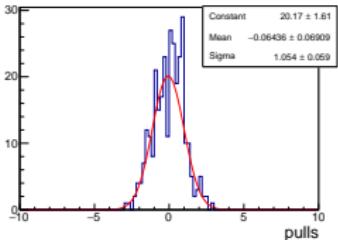
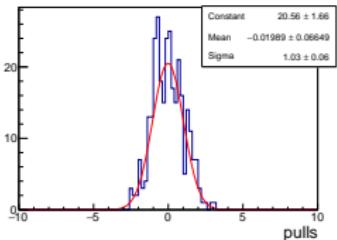
- ▶ Looking at yields from 300 files with 1M events
- ▶ extracting pulls distribution and systematics associated to it

$$pulls_i = \frac{N_i(\theta) - \bar{N}(\theta)}{\sigma_{N_i(\theta)}}$$

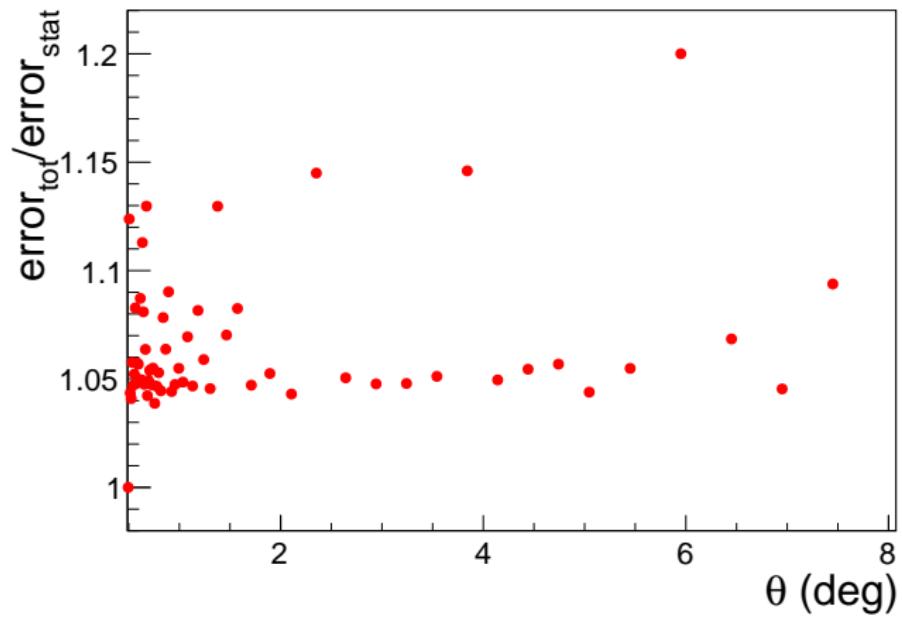
i = file index

$$\sigma_{syst}(\theta) = \sigma_{stat}(\theta) \cdot \sqrt{(max(1, \sigma_{pulls(\theta)}) + \delta_{\sigma_{pulls(\theta)}})^2 - 1}$$

Pulls distributions



Uncertainties on yield



Uncertainties on ratio

