

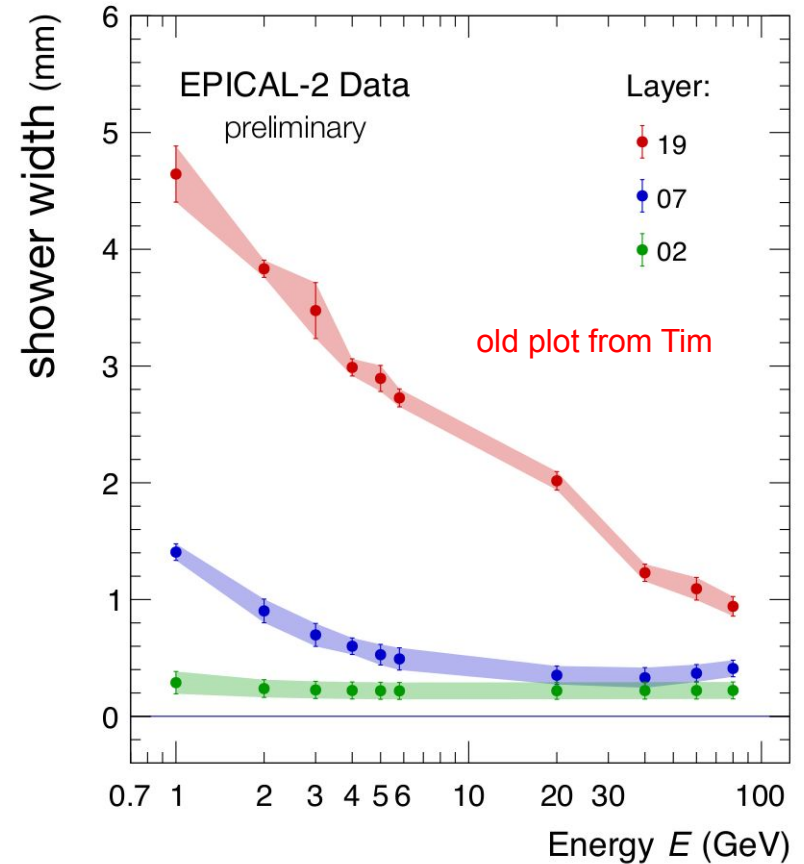
**EPICAL-2 Meeting - 16.01.25**

**FWHM**

**Jan Schöngarth**

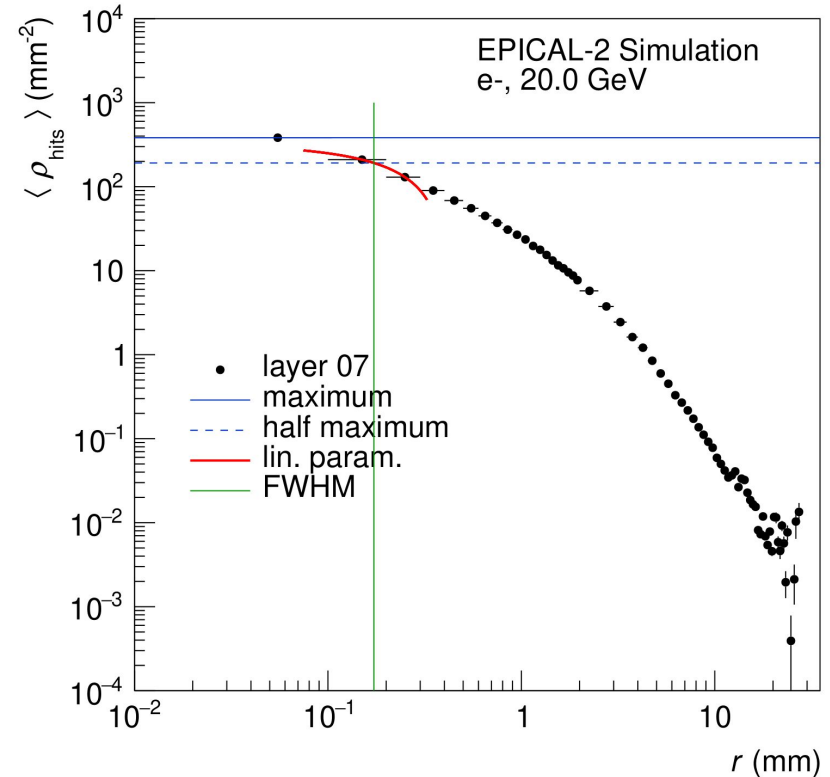
# FWHM

- analysis by Tim
- current status: reproducing result



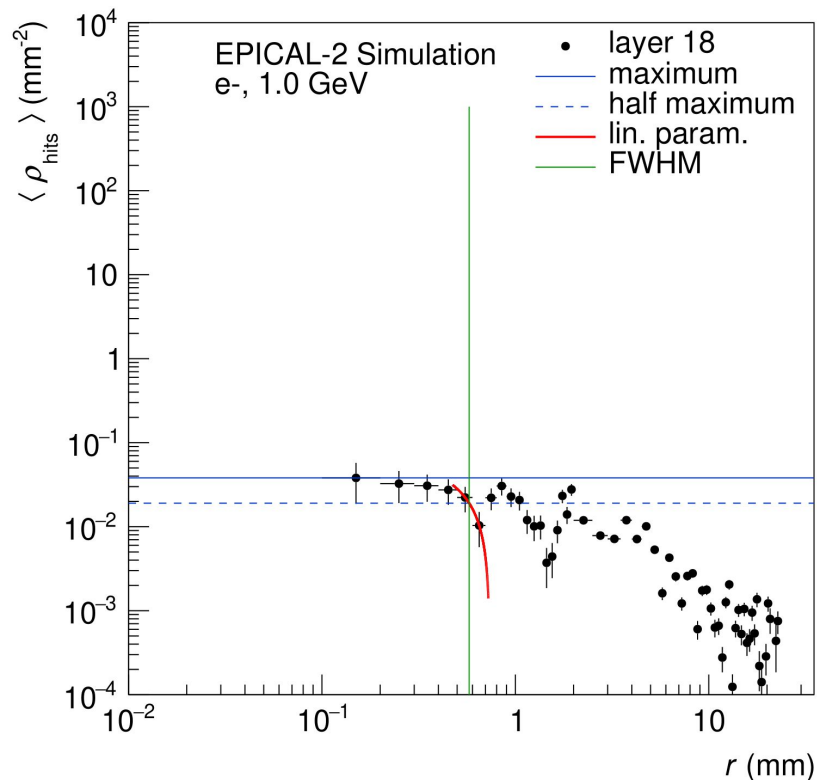
# Methodology

1. find maximum  $y_{\max}$
  2. find half maximum  $y_{1/2}$
  3. find last bin above  $y_{1/2}$
  4. linear fit between that bin and the next bin
  5. get x-value corresponding to  $y_{1/2}$  from linear fit
- works well for most energies and layers



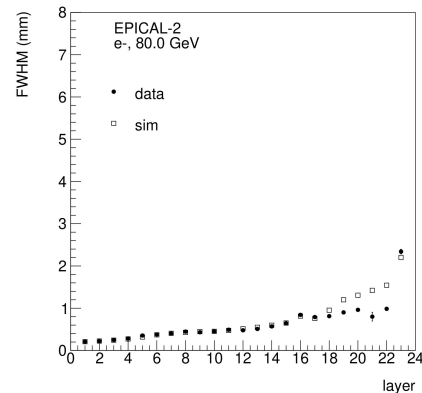
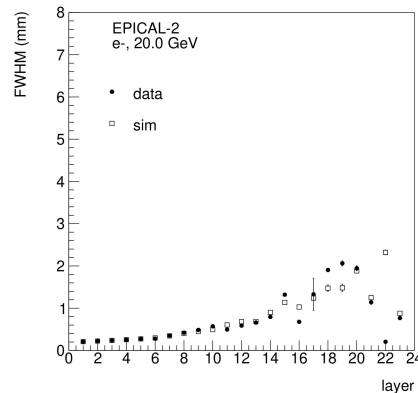
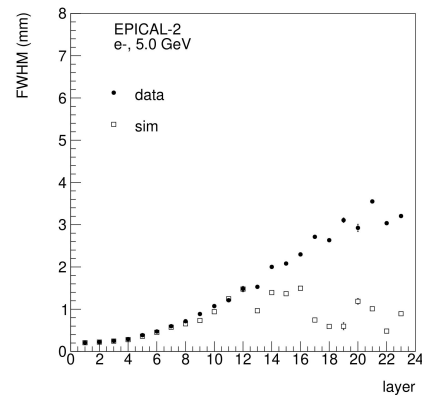
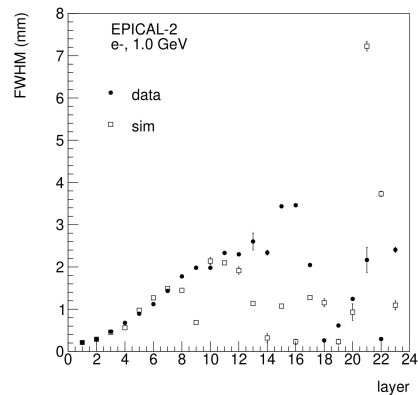
# Problems

- problem in deep layers at low energies
- low densities  $\rightarrow$  fluctuations
- half maximum line crossed multiple times
- maximum not guaranteed to be at smallest radius
- linear fit method unstable due to fluctuations



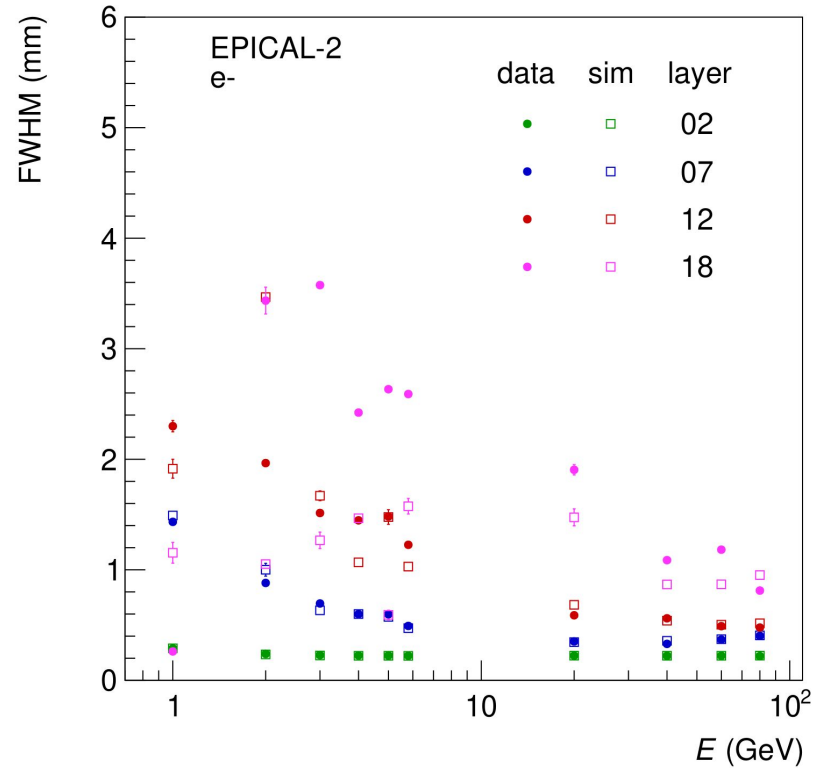
# FWHM

- method unstable for deep layers
- less statistics in simulation → more fluctuations (more statistics soon)
- method works well at high energies



# FWHM

- method unstable for deep layers
- less statistics in simulation → more fluctuations (more statistics soon)
- method works well at high energies
- rising FWHM towards high energies → saturation?



# FWHM

