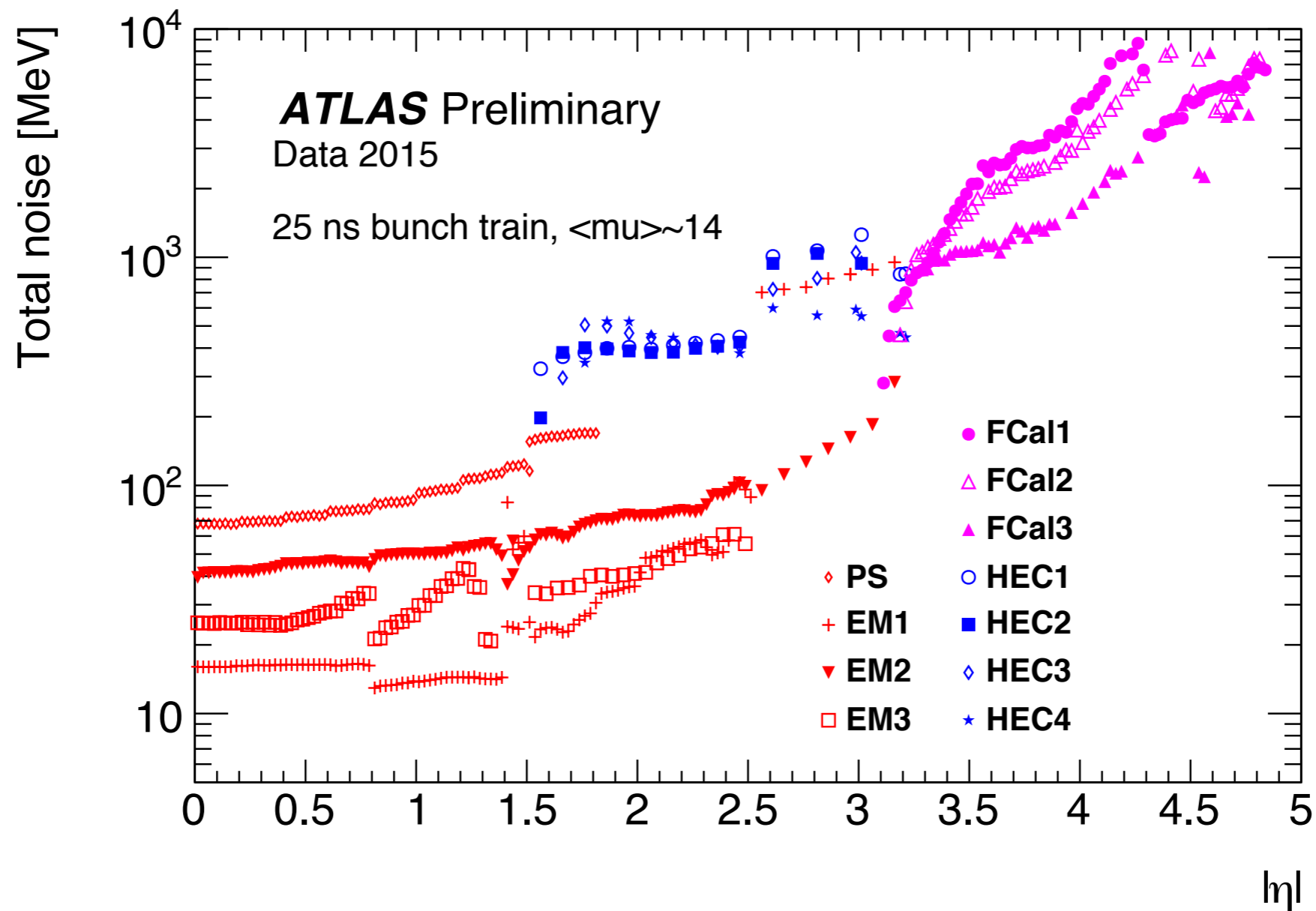


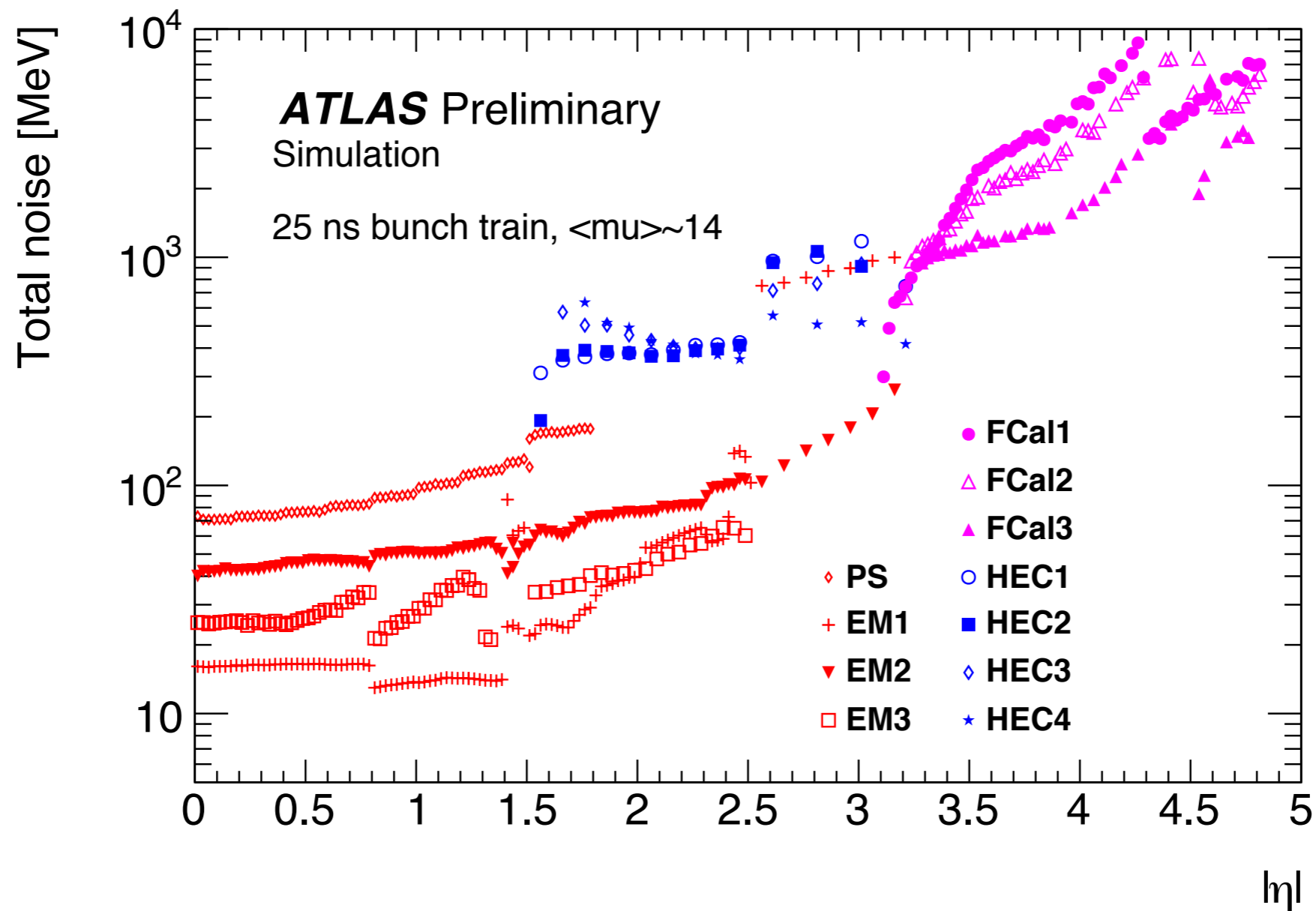
LAr total noise in 2015 data

- RMS total noise measured per cell
- pileup $\mu \sim 14$ (in data $\mu/1.16 \sim 14$)
- Data = zero Bias ESD run 283429, LB 154-159
- MC
valid1.159024.ParticleGenerator_gamma_Et25.recon.ESD.e3099_s2578_r7058_tid06478737_00 rejecting cells close to the single true photon direction and selecting only events with $13 < \mu < 14$



Caption: Total noise (electronics and pileup) per cell as a function of eta for each LAr calorimeter layer.

The noise is measured in ZeroBias data (random filled bunch crossing triggered proportionally to luminosity), taken at ~ 14 average interactions per bunch crossing ($\langle\mu\rangle$) with 25ns bunch spacing

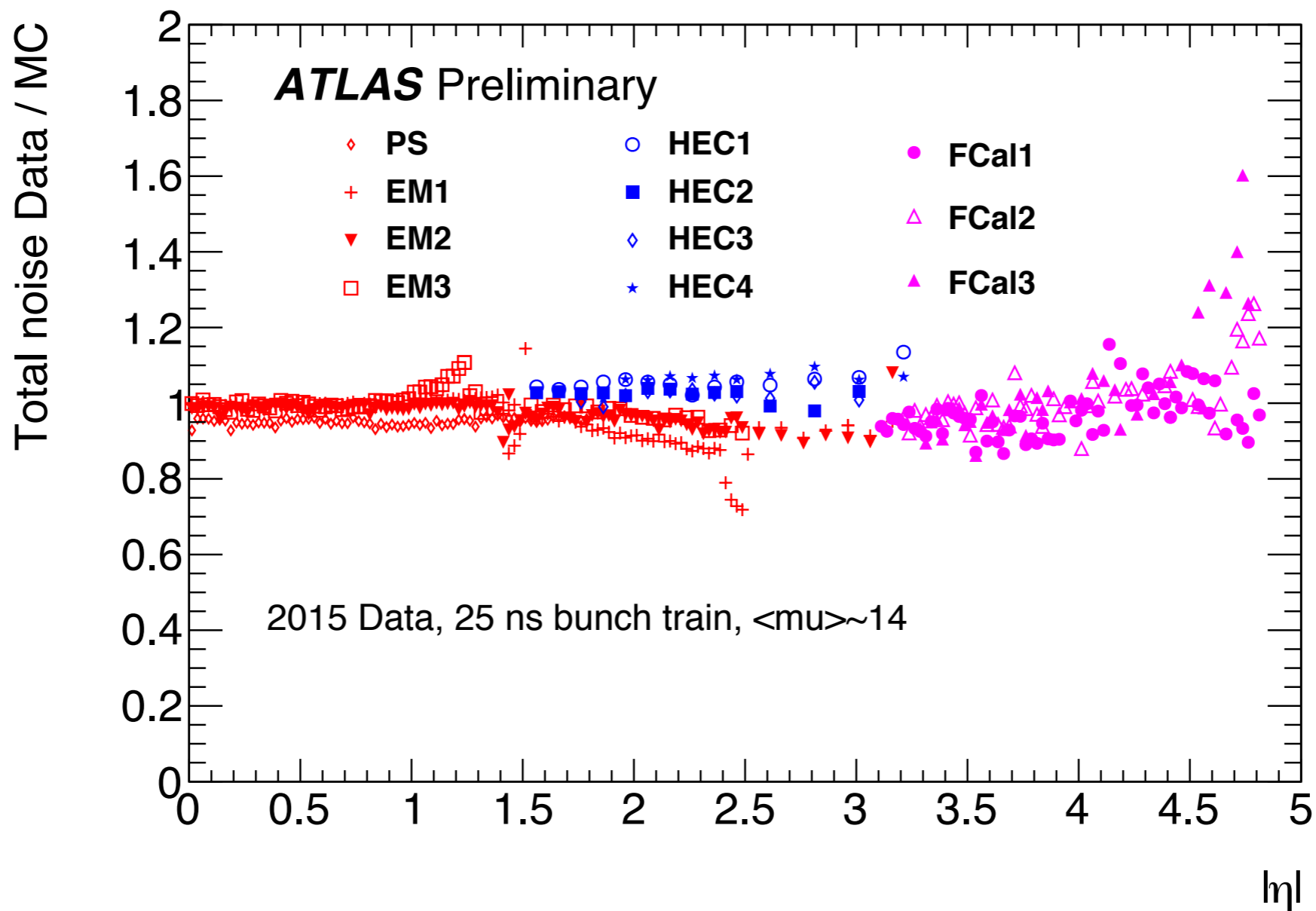


Caption: Total noise (electronics and pileup) per cell as a function of eta for each LAr calorimeter layer from simulated samples

The computation is done on a MC sample with pileup with $\langle \mu \rangle \sim 14$ and with 25ns bunch spacing. The MC pileup simulation is done by overlaying Geant4 simulated events from Pythia (Pythia8 v8.186, with MSTW2008LO pdf, TuneA2 [ATL-PHYS-PUB-2012-003] is used) including non diffractive and diffractive events.

The overlay takes into account the full sensitive time of the detector (~ 500 ns for the LAr) and the bunch train structure.

The electronics noise in the lowest eta cells of HEC3 and HEC4 is incorrect by a factor 2 in the MC simulation



Caption:Ratio of total noise per cell between data and simulation as a function of eta for each LAr calorimeter layer.

Both data and simulation have pileup with $\langle\mu\rangle\sim 14$ and 25 ns bunch spacing.