$dE/dx$ in the ITS

Current status/experience
General considerations

Marco van Leeuwen,
Utrecht University
Truncated mean
Lowest 50% of points

Tracks with 3, 4 points

Global tracks

Standalone

Resolution 10-15%
Worse for standalone tracking
than combined tracking
(effect of mom resolution)
SDD calibration

Drift time dependence

Module by module

Calibration precision ~1% rather straightforward
SSD Calibration

P vs N calibration

P-N asymmetry due to asymmetric shaper voltage (corrected by now)

Detector response relatively uniform before calibration

Calibration to ~1% rather straightforward
Comparison to TPC

TPC resolution ~5% much better than ITS ~12% (more samples)
Final comments

• ITS PID performs well
  – Calibration straightforward, stable
  – Resolution close to MC-expected
• NB: most of $p_T$-reach overlaps with TPC
  – ITS dE/dx mostly niche application: low $p_T$, standalone tracking