Introduction

Morning

- Physics prototype:
  - current analyses, future priorities
  - Future test beams, cosmic tests

- ILD studies
  - ECAL optimisation
  - Mechanics, cables

Afternoon

EUDET module status and planning

Shower fluctuations and correlations in electron events (using 2007 data)

Will allow more sophisticated use of shower shape in photon/electron ID

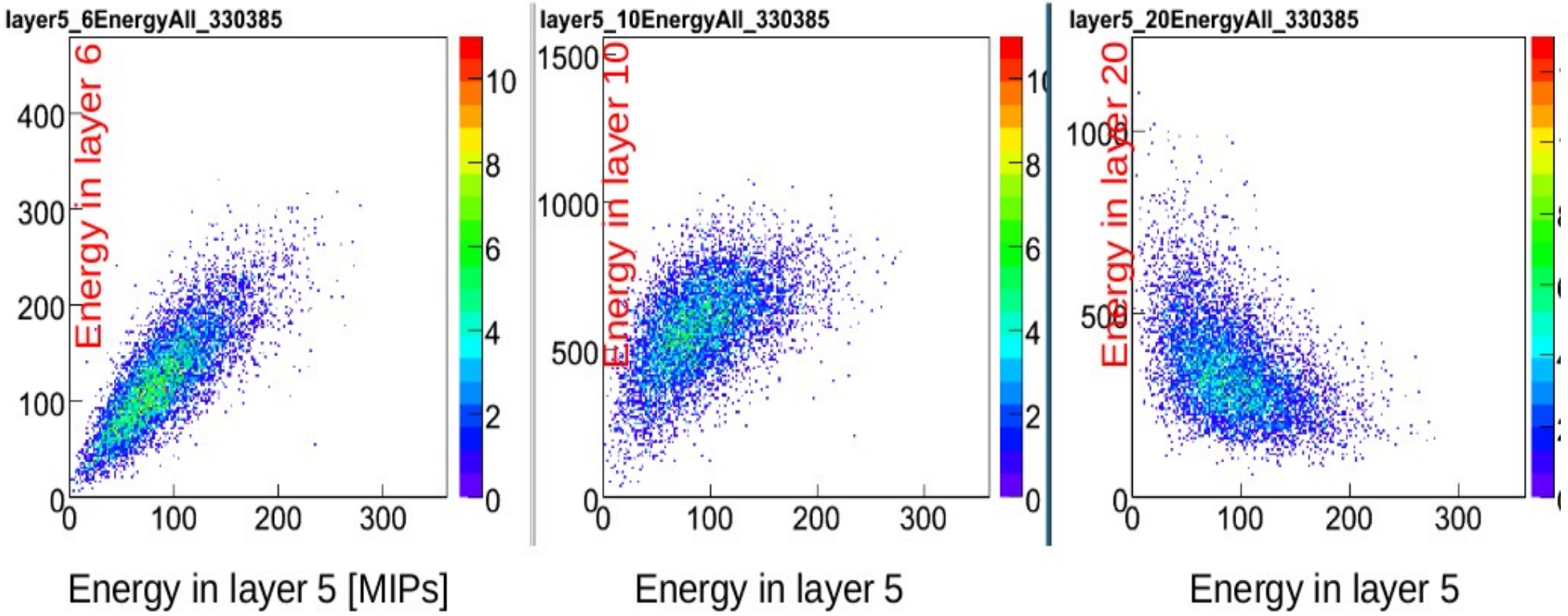
3-d shower shape

Radius wrt axis vs layer (assume azimuthal symmetry)

Correlations between layers

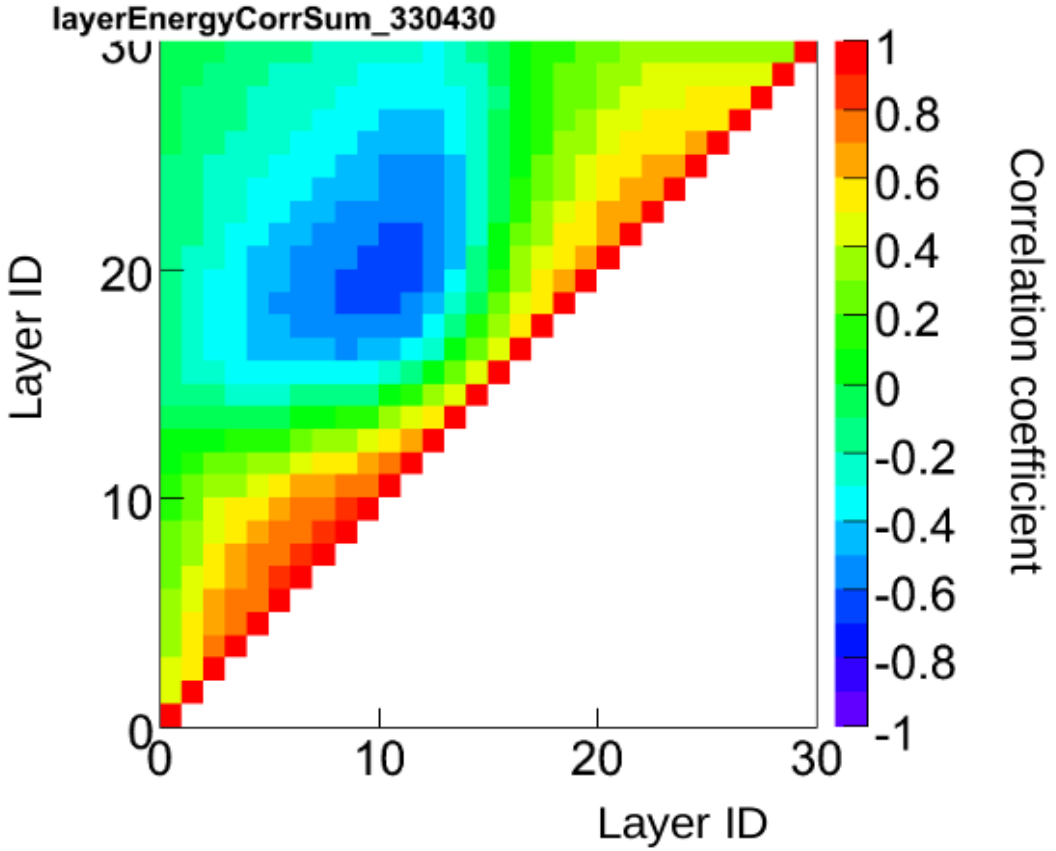
layer-to-layer fluctuations/correlations (a 30 GeV electron run)

Energy deposit per layer



Correlation between energy deposit in different layers

(n.b. Distributions not always Gaussian)

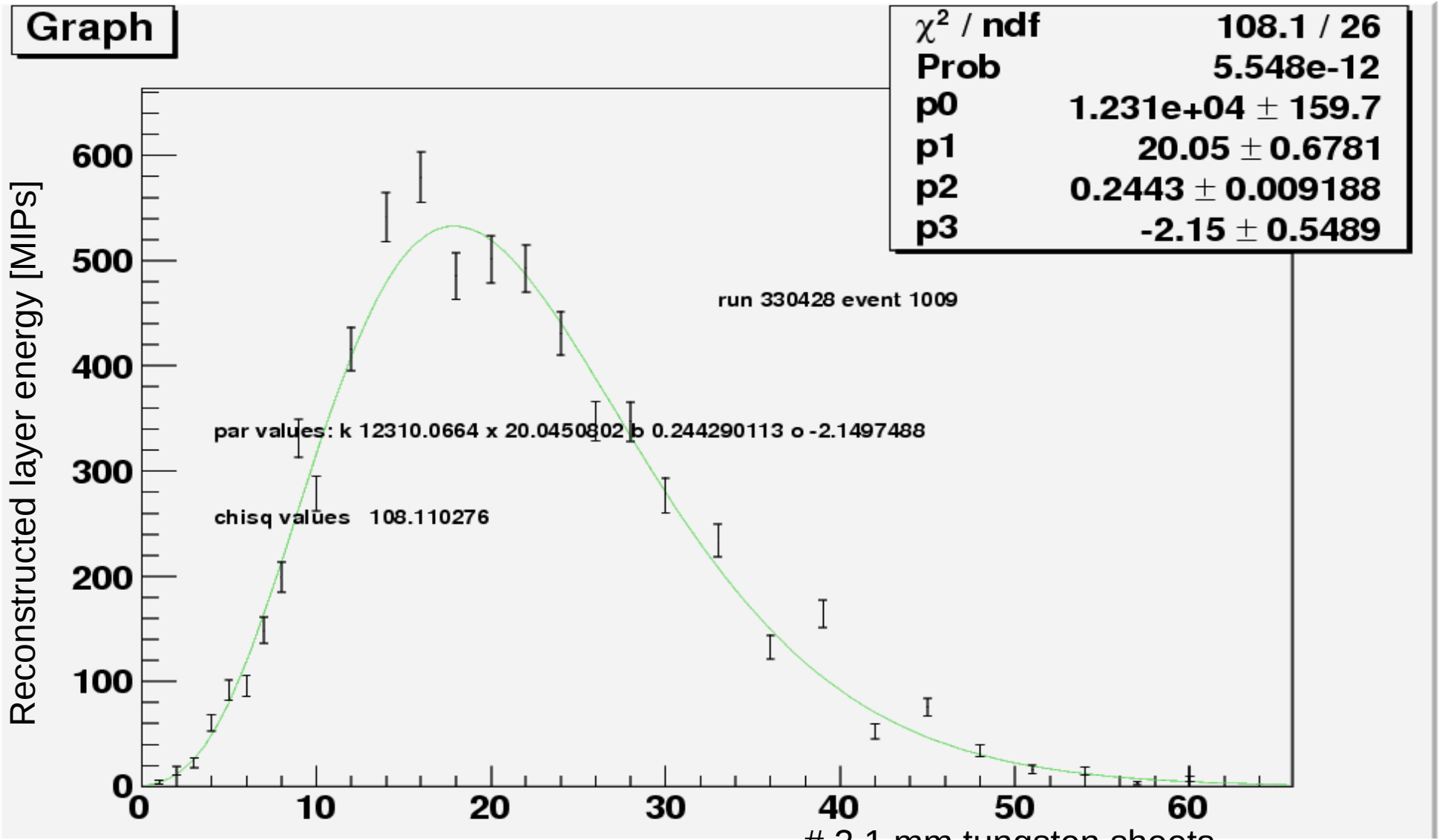


Relatively large positive correlations in range 2-> 5 layers
Some negative correlations in range of ~10 layers

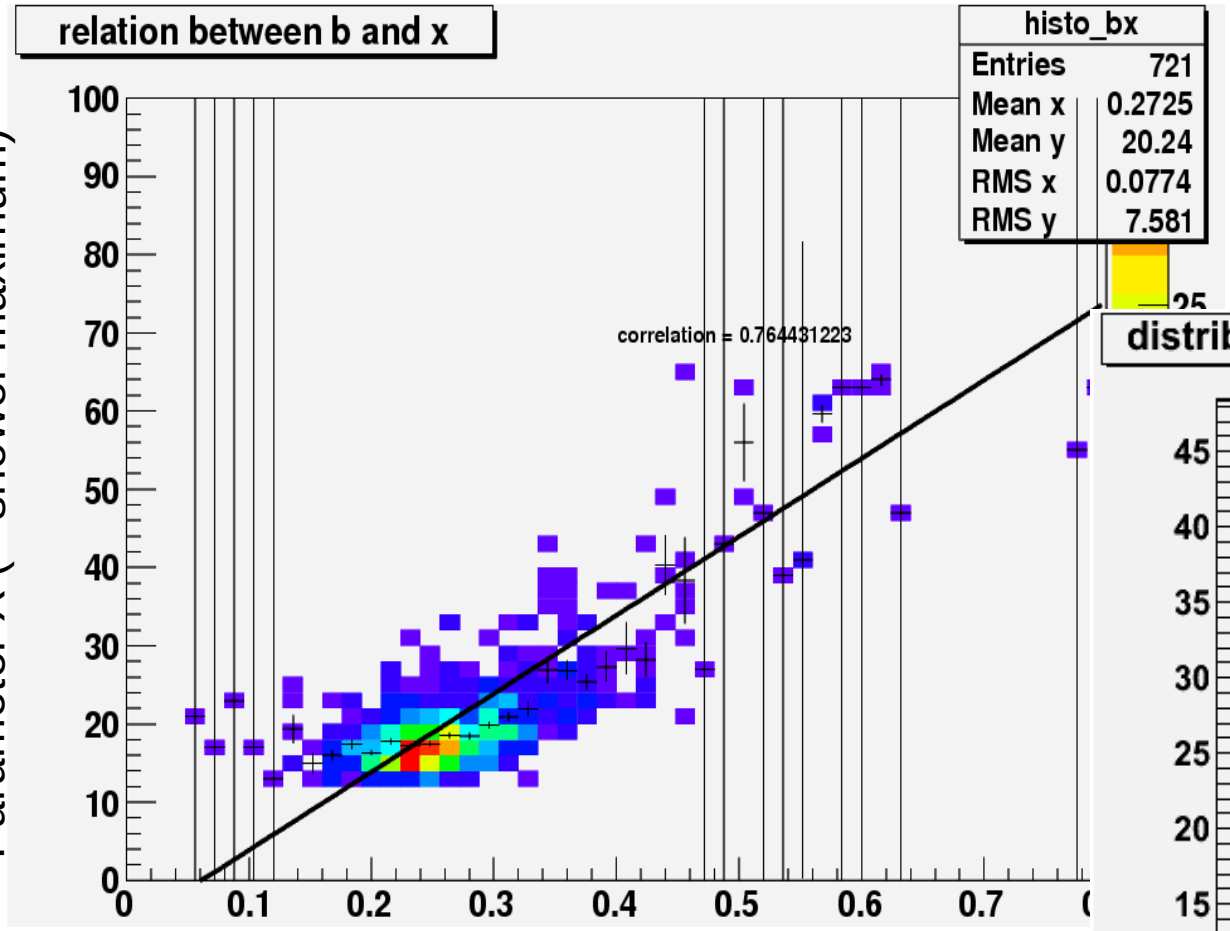
Now looking at event-to-event fluctuations in shower shape (with M. Soni, summer student)

e.g. fit longitudinal profile event-by-event

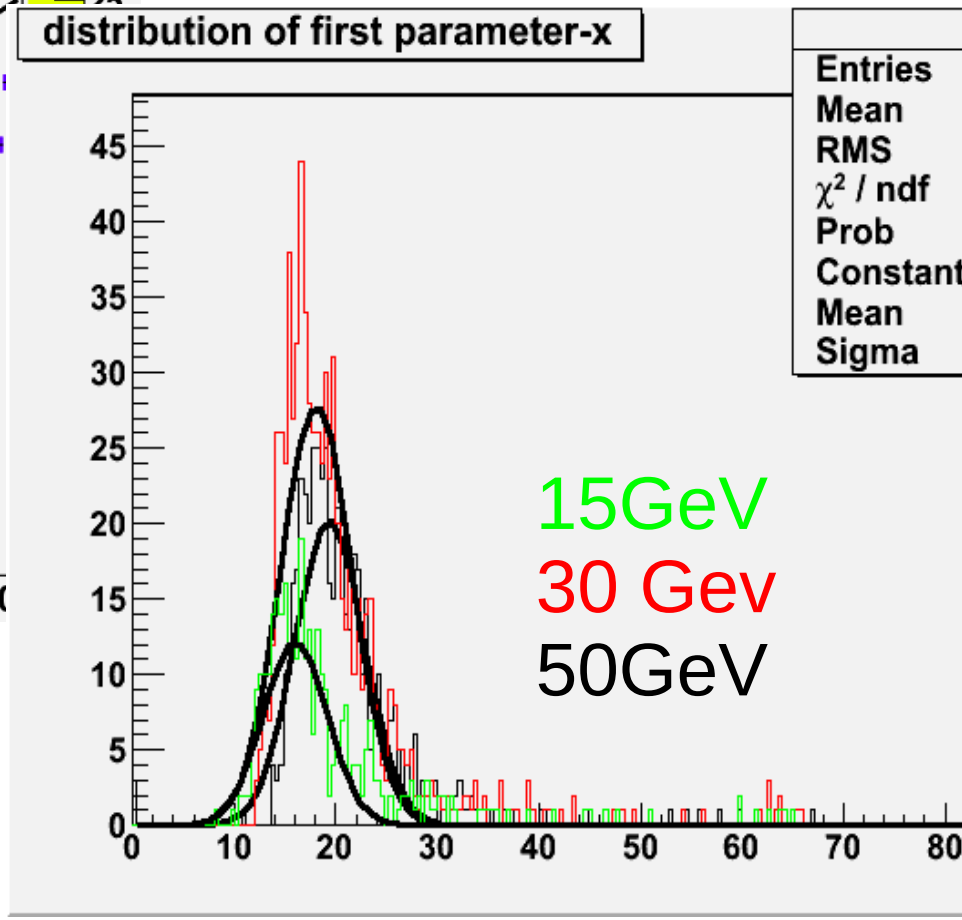
$$dE/dt = (E_0/\Gamma(bX+1))\, b^{(bX+1)}\, (t-o)^{bX}\, e^{-b(t-o)}$$



Look at how fit parameters vary event-by-event,
and their correlations



And variation with energy



Past, present, future physics prototype analyses
-> publications

Some thoughts:

Position / angular resolution
- Kaloyan and Michele have presented studies

Average shower shape
- Valeria and George have performed analyses

Angular scans
- Energy resolution etc vs. angle

Two-particle separation
- Event overlaying

Combined ECAL/AHCAL analyses:
- “Leakage correction” for high energy e-
- combined hadron analyses (together with AHCAL group)