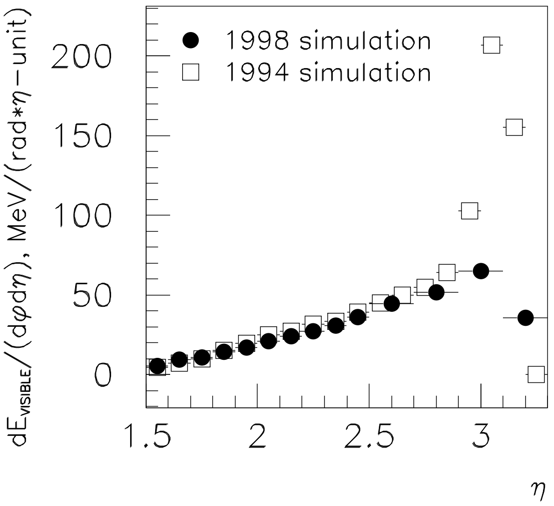
Estimate of the Current in LAr Gaps of HEC Modules

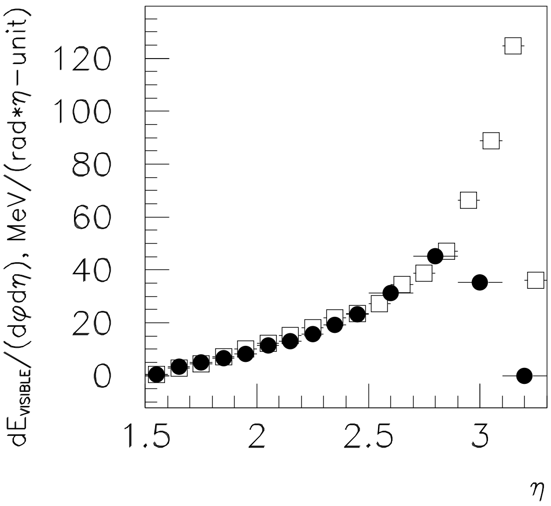
A. Kiryunin
February 22, 2000

- Discrepancy between results
  - presented by A. Kiryunin at December LARG week
  - presented in the ATLAS internal note LARG-NO-024 (1995)
- Comparison between minimum-bias events, simulated in 1998 and 1994
- Difference — in energy depositions in the region $\eta >$2.9 (no EMEC in front of HEC there in 1994 simulations)
- Change of scale factor *VISIBLE ENERGY* $\rightarrow$ *CURRENT*
  - use "canonical" coefficient 8300 nA/vis.GeV (LAr calorimeter TDR)
  - additional factor 2: electron and ion currents in gaps

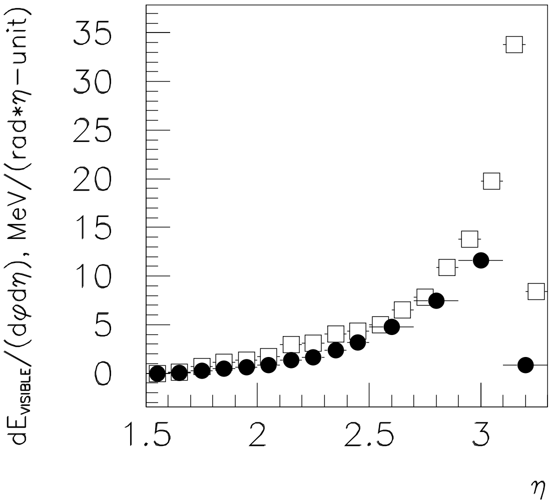
Energy in HEC Layers in a Single MB Event



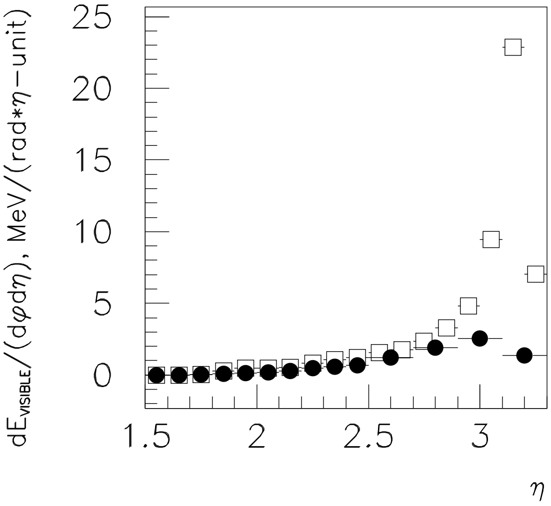
HEC layer 1



HEC layer 2

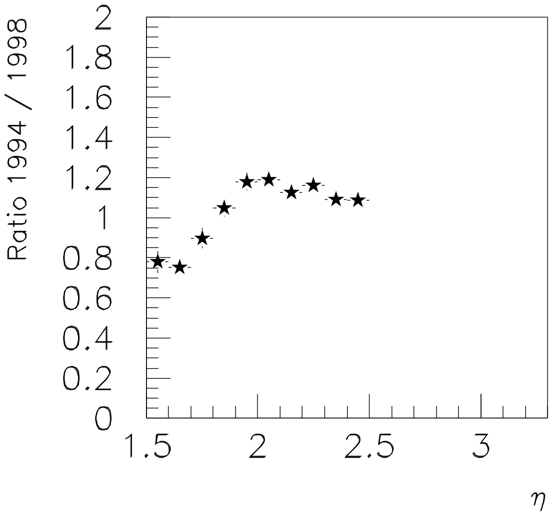


HEC layer 3

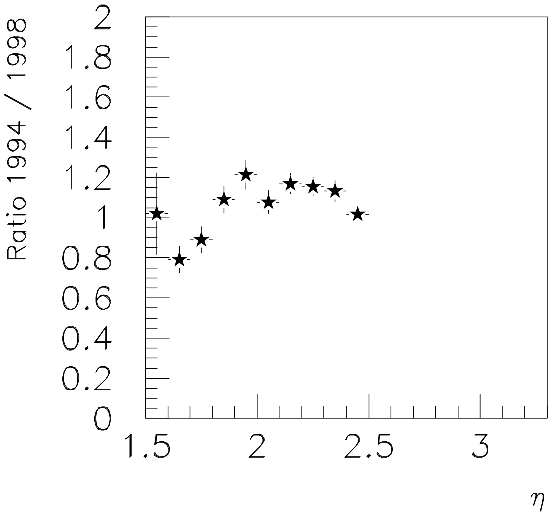


HEC layer 4

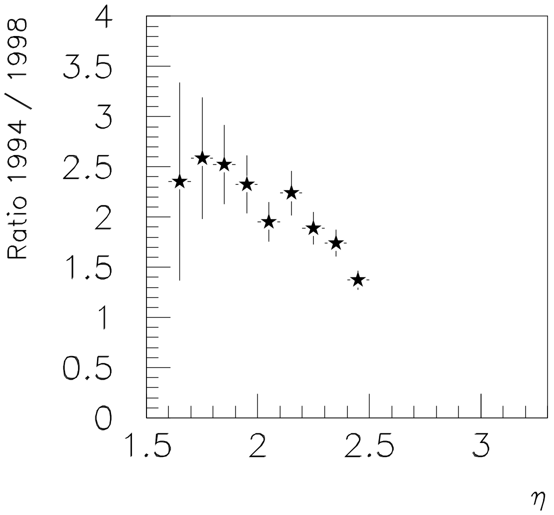
Energy in HEC Layers in a Single MB Event



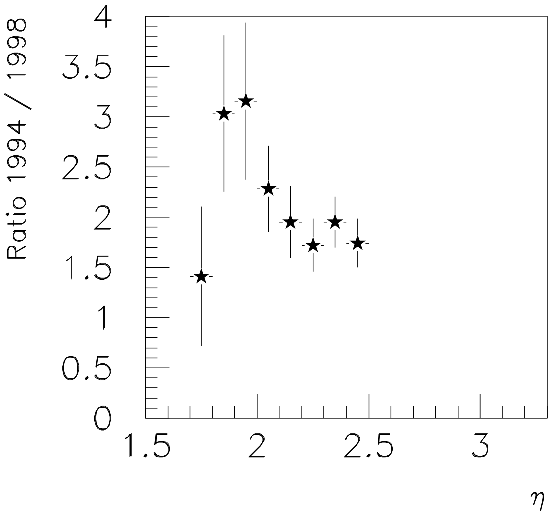
HEC layer 1



HEC layer 2

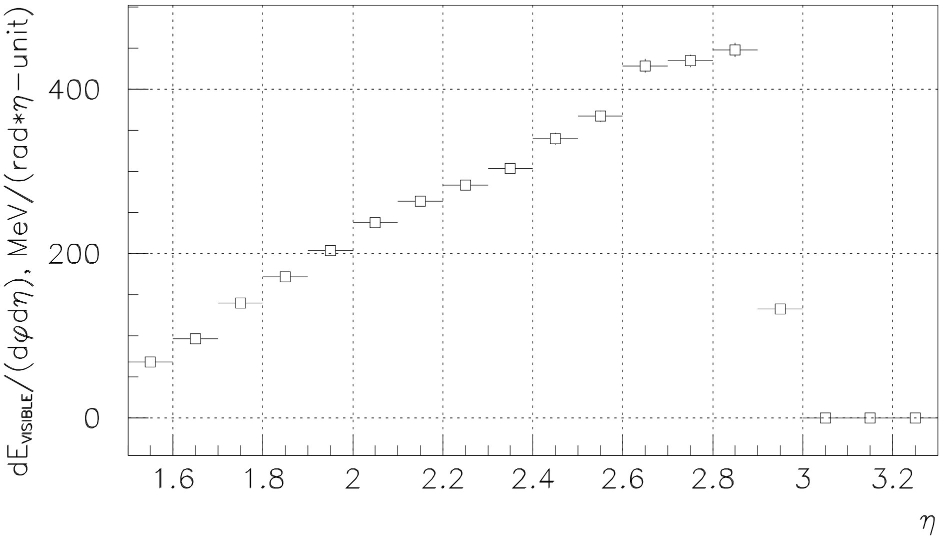


HEC layer 3

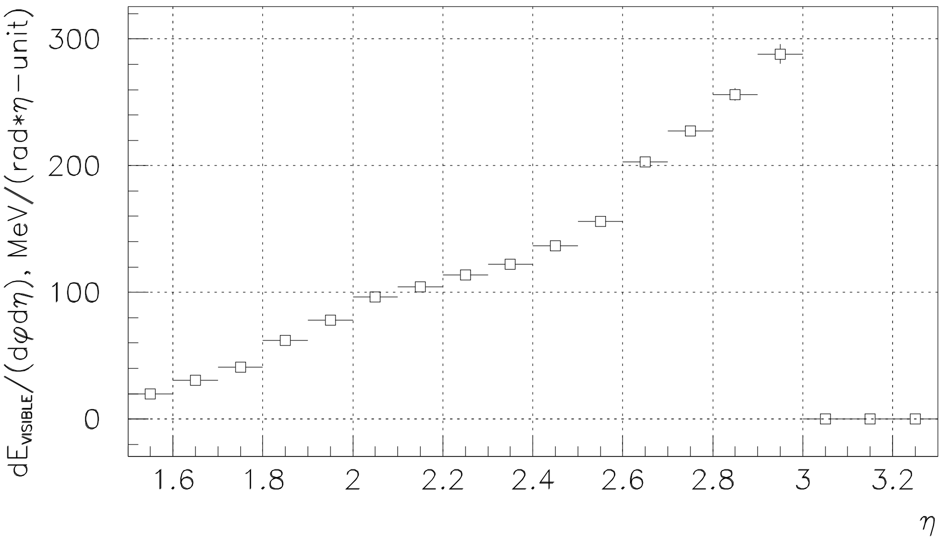


HEC layer 4

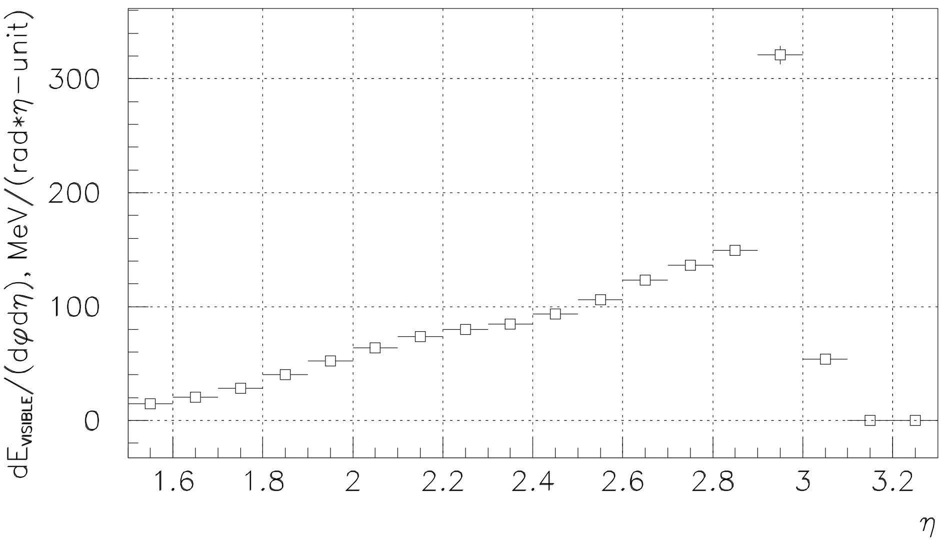
Energy in End-Cap Layers in a Single MB Event (1994 Simulations)



EMEC layer 1

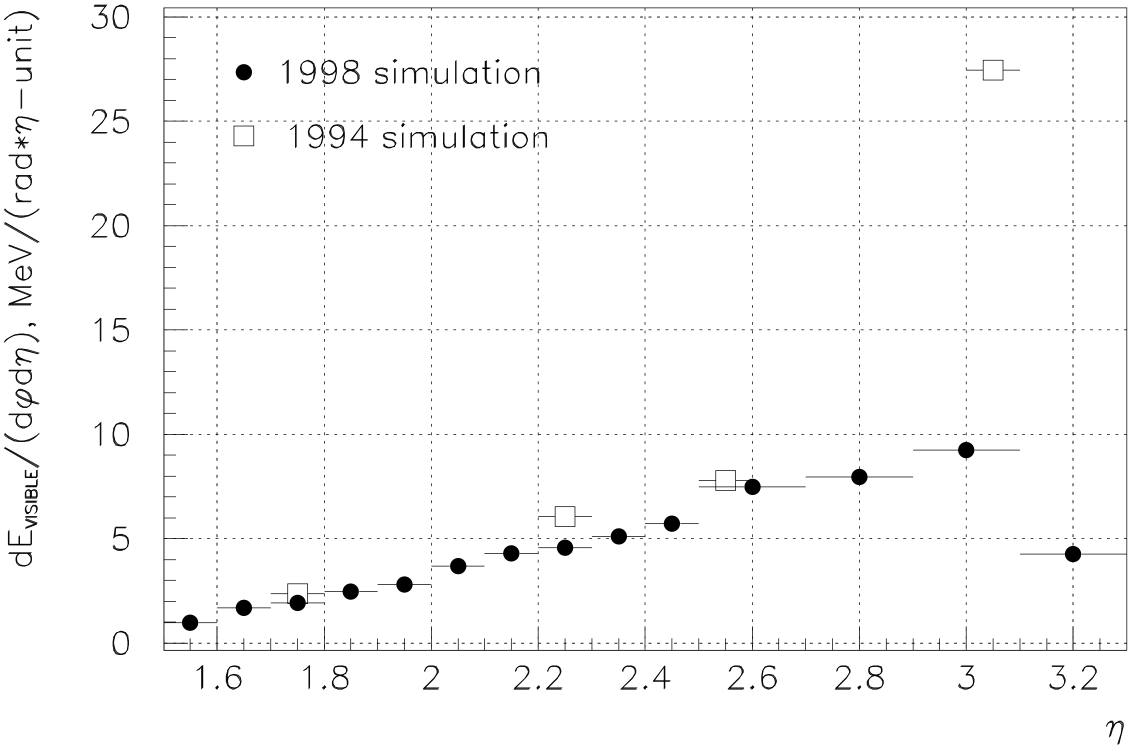


EMEC layer 2

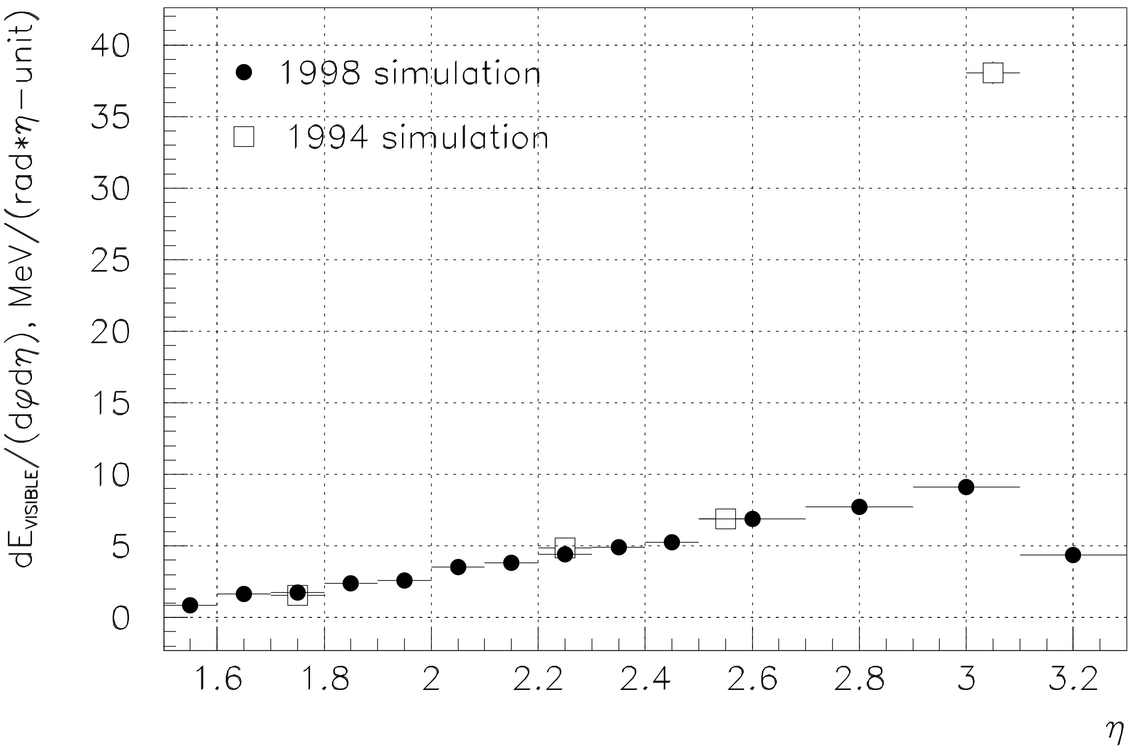


EMEC layer 3

Energy in Gaps of HEC Modules in a Single MB Event

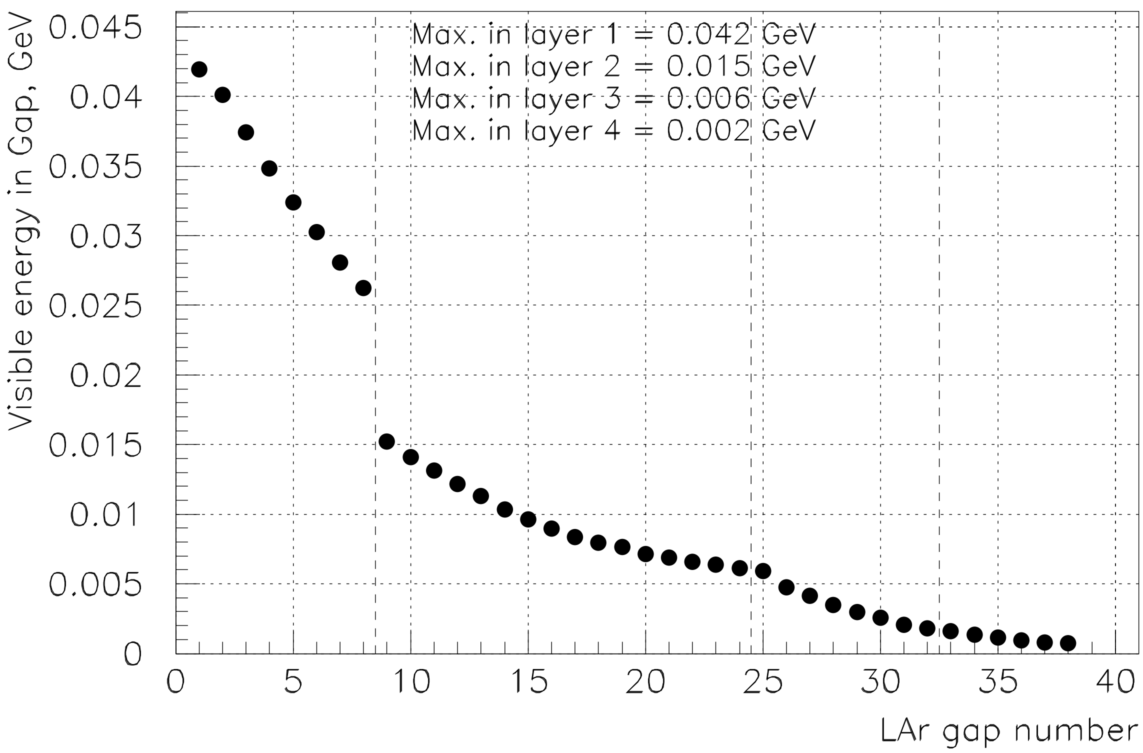


LAr gap no.1

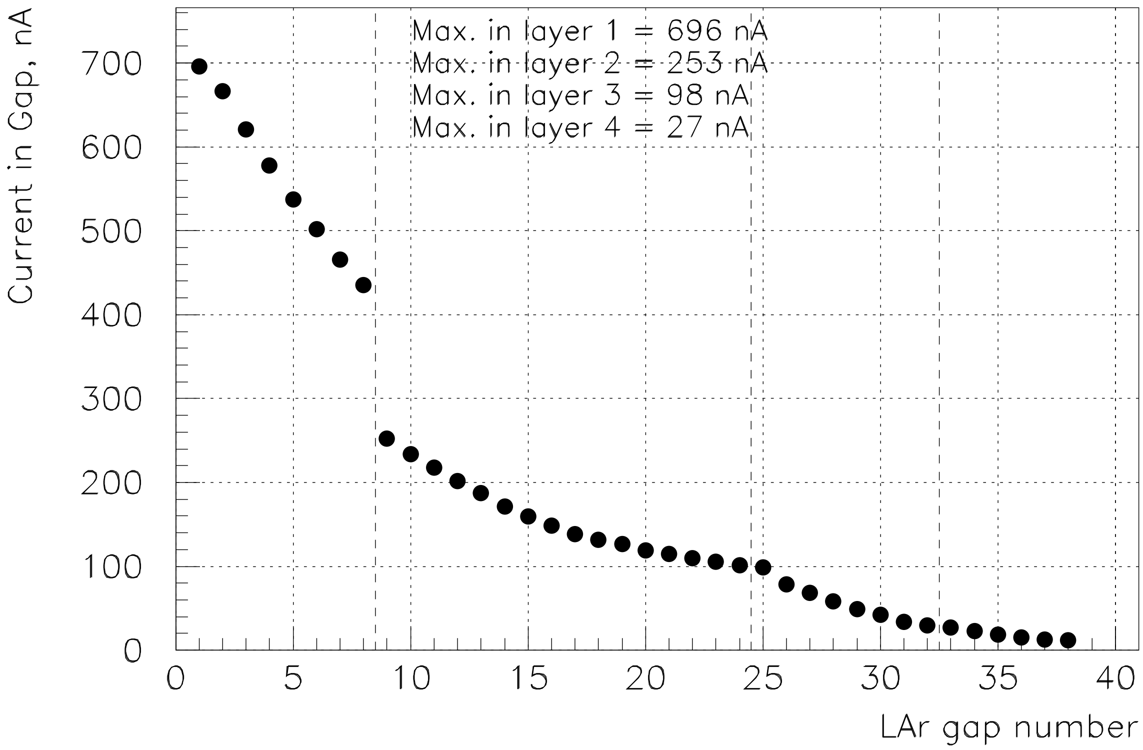


LAr gap no.2

Signal in LAr Gaps of One HEC Module after Pileup of 23 MB Events



Mean visible energy in a single bunch Xing



Mean current in a single bunch Xing