A. Update on the RoI size studies.

Select the events…

Reject all the events with negative energies or unphysical values of eta, phi

25.5% (!!!) at LowLuminosity.

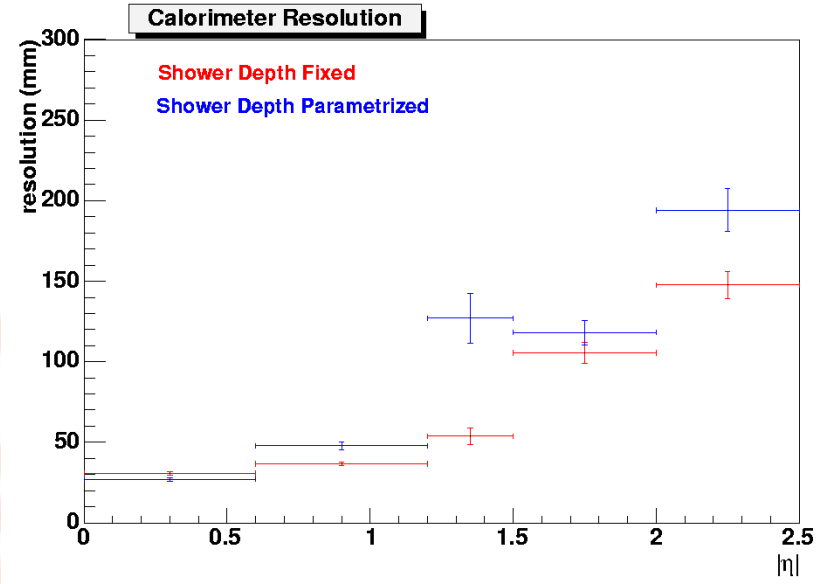
40% (!!!) at HighLuminosity.

Select the cluster to use…

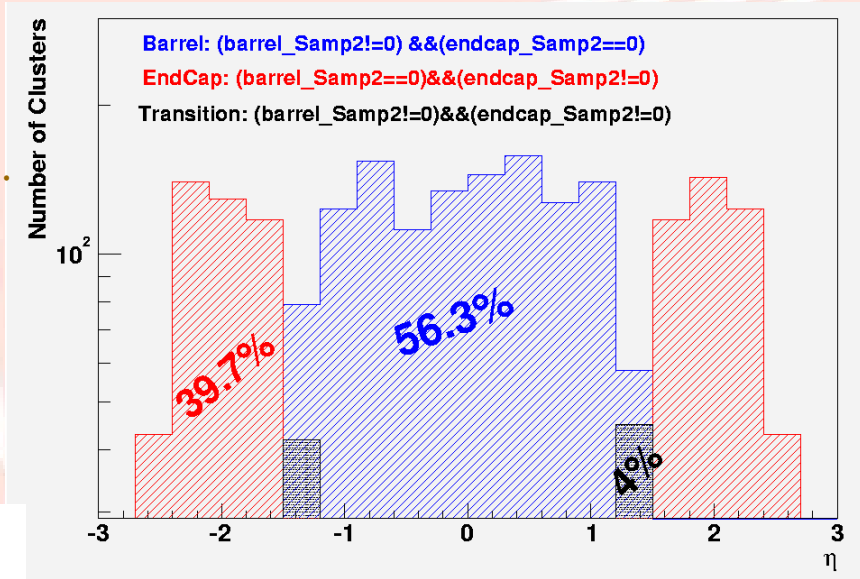
The closest to RoI in eta/phi. Does T2Calo provide the cluster for each RoI yet?

Determine the Shower Depth…

Parameterisation didn't work. The Fixed Values where used instead.



Define the regions of the Detector…



Barrel 1: 0.0<|η|=0.6

Barrel 2: 0.6<|η|=1.2

Transition: 1.2<|η|=1.5

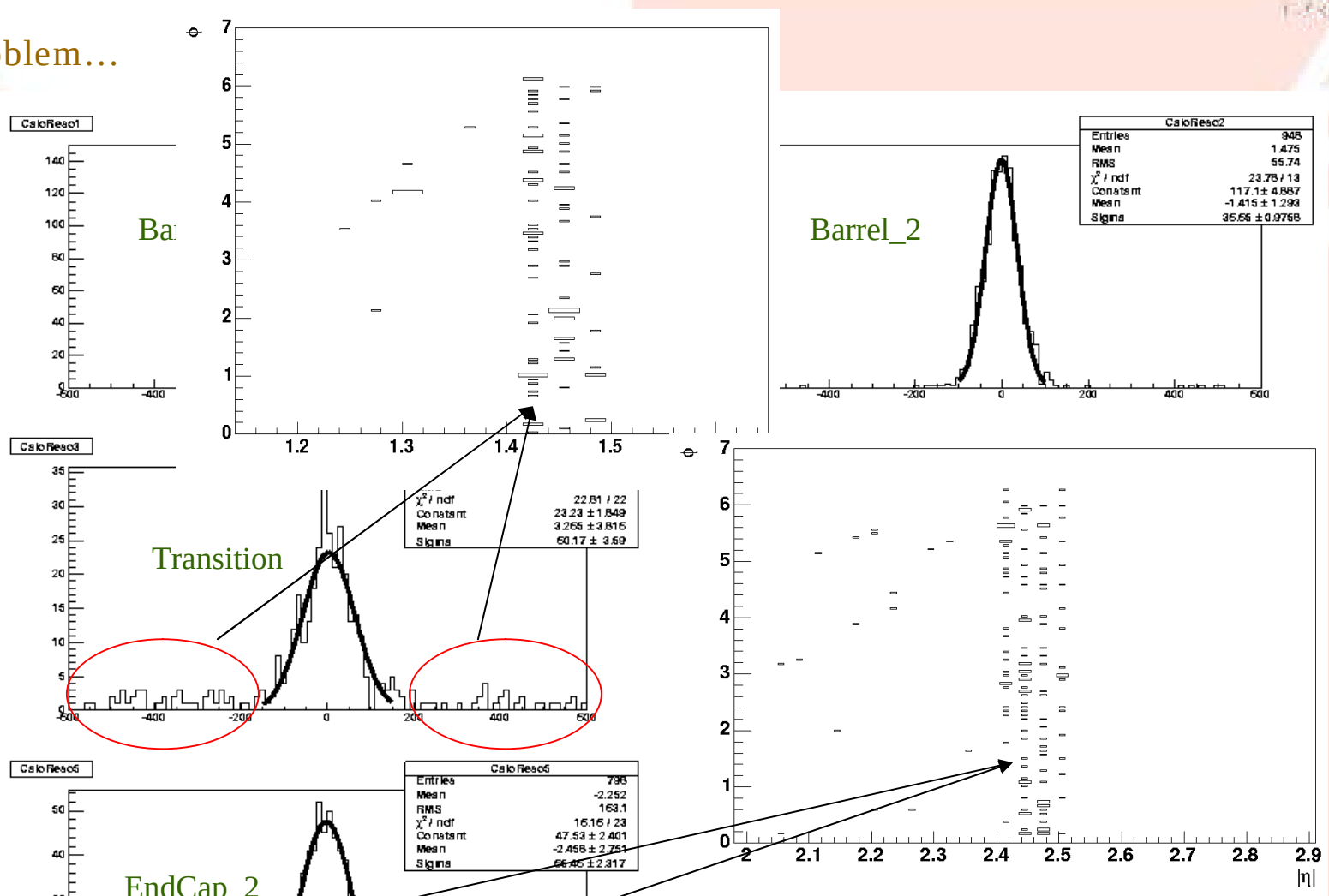
EndCap1: 1.5<|η|=2.5

EndCap2: 2.5<|η|

January, 20th 2005
…at RAL

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef

Problem…



Method fails in (more than) 20% events !!

What's wrong with these events??

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef

Solution…

The method can not be applied in the following regions (excluded !):

~1.41<|h|=~1.53

|h|>~2.5

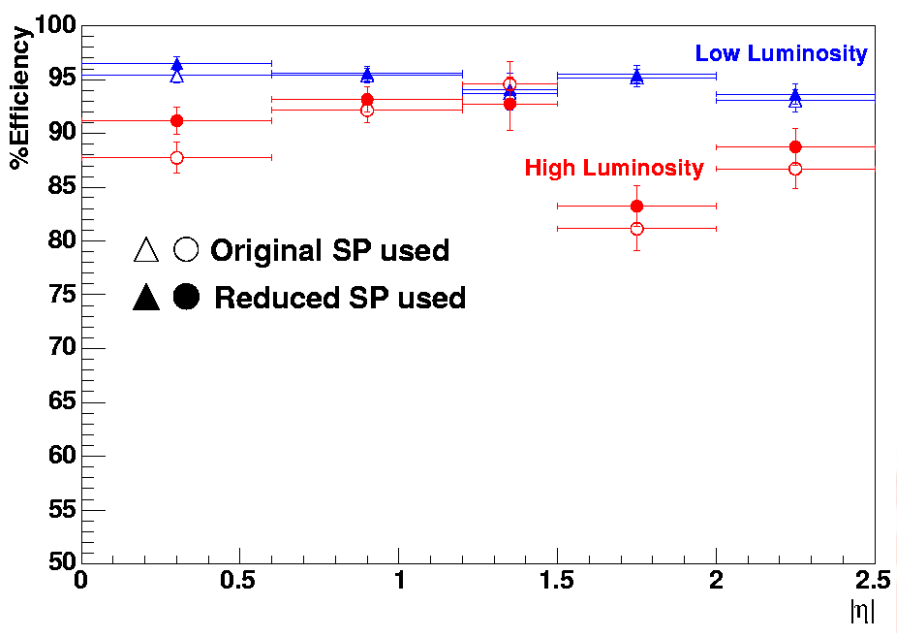
Use the initial RoI in that case….

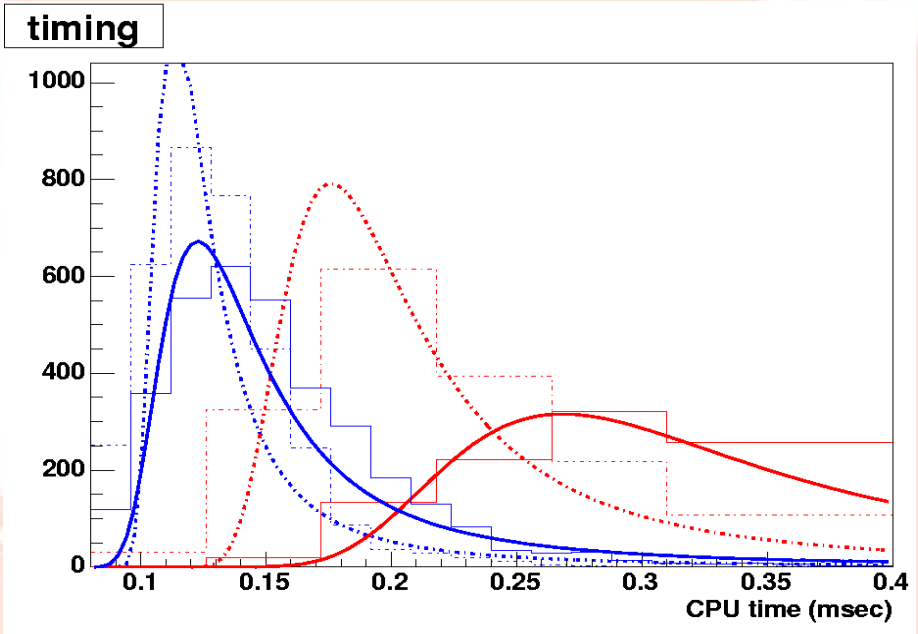
Methodology in Brief

Region…..		……apply
Barrel :	0.0<|h|=1.2	constant Rho
Transition:	1.2<|h|<1.41	sophisticated way
Exclude:	1.41 = |η|=1.53	Original RoI
EndCap:	1.53<|h|<2.5	constant zed
Exclude:	2.5 = |η|	Original RoI

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef

Results…





	Mean (ms)		Landau MPV (ms)
Original	0.15		0.12
Reduced	0.13	(-13%)	0.11
Original	0.37		0.28
Reduced	0.23	(-52%)	0.18

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef

Conclusions - Next (final) steps…

1. **The applied method works! More promisingly at the High Luminosity phase.**
2. **Optimize (correct) the region selection and the shower depth parametrisation.**
3. **Apply with the info from T2Calo.**

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef

B. e/gamma Package.

- Did nothing on that… Apologies…
- BUT spend most time from now on….
  I. First priority: Decouple the input reading from the analysis itself.
     - Based on the 'intermediate' version. Make it public.
     - Read and Use only the variables needed for each level. (….good exercise to understand them!!)
  II. Then update the web page. Use it to keep people informed with the latest efficiencies.
- Time schedule: Certainly before the next ATLAS week.

Efstathios (Stathis) Stefanidis
sstef@hep.ucl.ac.uk www.hep.ucl.ac.uk/~sstef