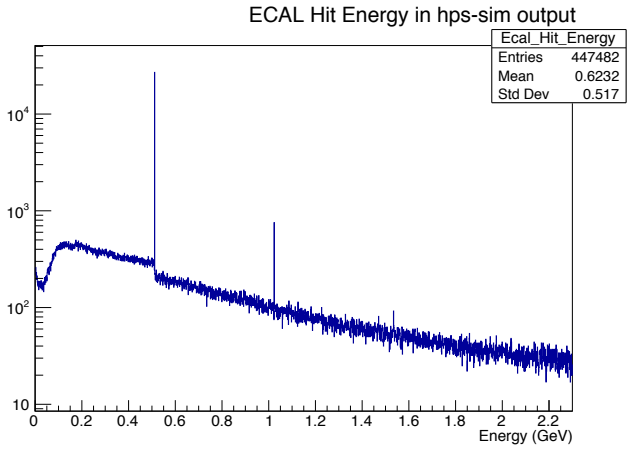
# Comparison of SLIC with HPS-sim output.

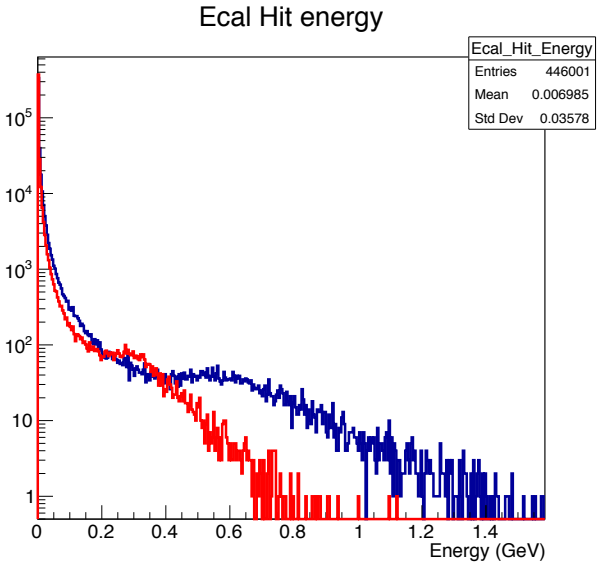
Initial check of purely raw output from SLIC versus hps-sim showed that the energy scale for ECAL hits was incorrect. Before changes the hps-sim ECAL hit energy looked like this:

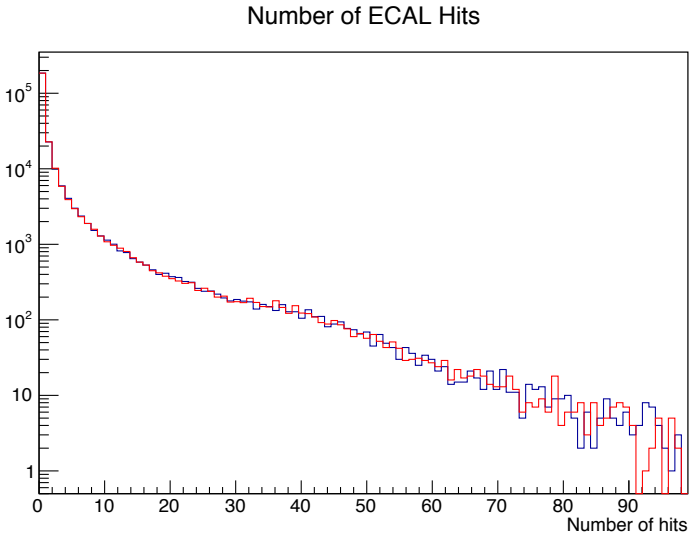
The histogram shows that the energy scale is incorrect and is most likely MeV not GeV. The code needed to be changed in several places, so also the hit contributions are corrected.

After changes to hps-sim a comparison between hit energies is much closer, but not quite identical.

We cannot say if SLIC is a little low, or hps-sim is a little high.



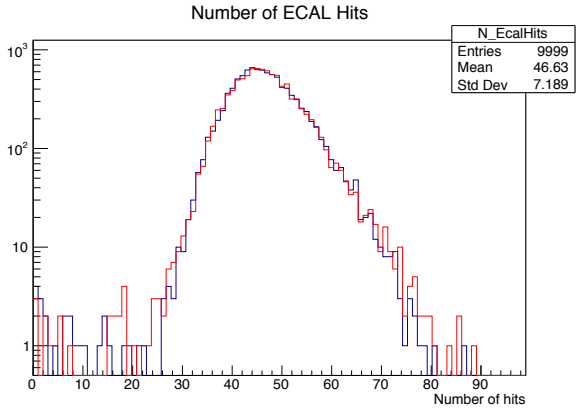




In red is SLIC output, in blue is hps-sim. The number of number of hits are identical.

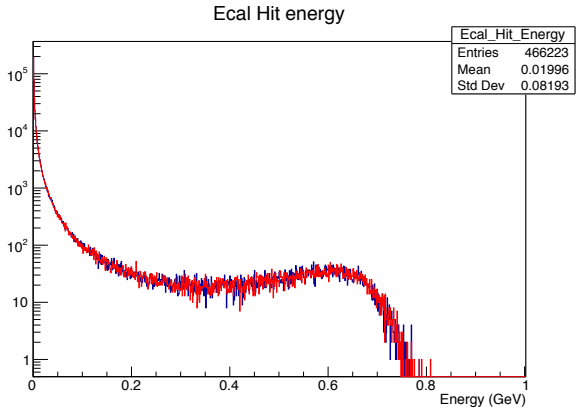
Using a special stdhep file with only electrons at a fixed angle, it was found that the hit energy for the ECal were doubled. The fix was made on branch issue9.

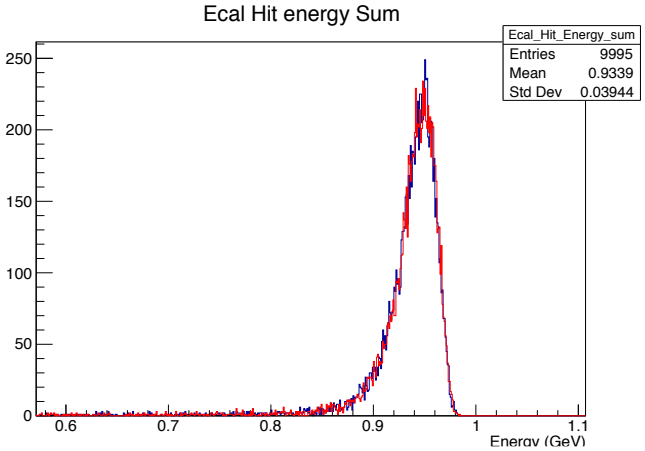
**After the Fix: Slic in Blue and hps-sim in red:**

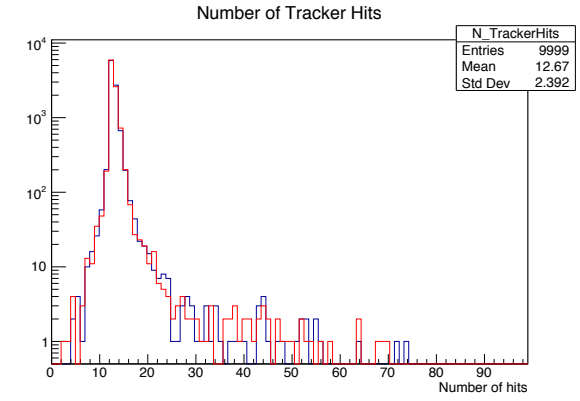


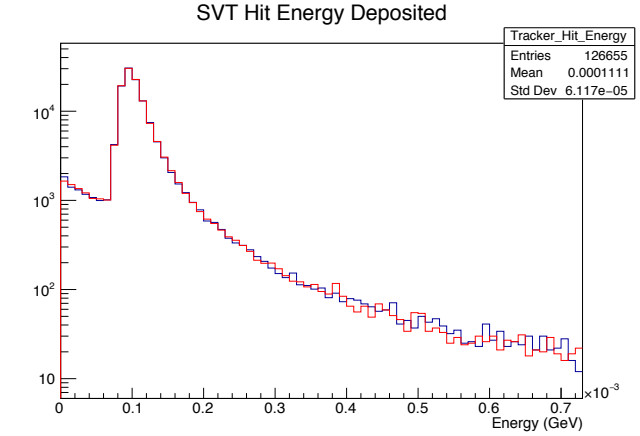

For the ECAL, number of hits per event and the energy distribution of the hits are now identical.

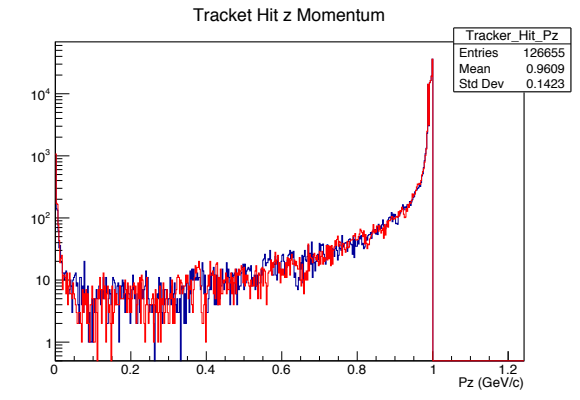
Similarly, for the SVT the number of hits and the energy distribution of the hits are identical.

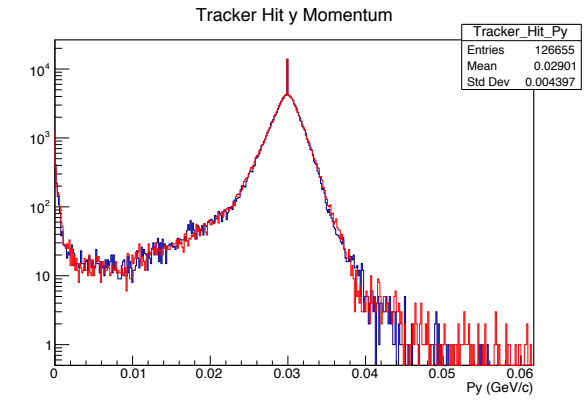


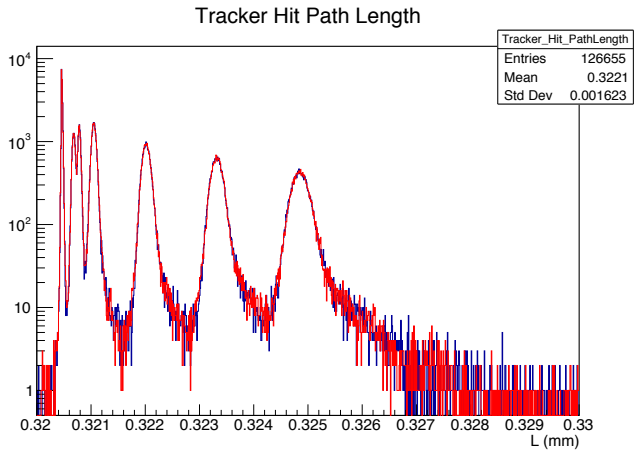






---

# Run Readout on File

```
java -cp $HPSJAVA org.hps.util.FilterMCBunches slic_electrons.slcio out_slic_e500.slcio -e500 -a
java -DdisableSvtAlignmentConstants -Xmx512m -jar ${HPSJAVA} -r /org/hps/steering/readout/
PhysicsRun2016TrigSingles0.lcsim -i out_slic_e500.slcio -DoutputFile=tmp3.slcio
```

It seems wasteful of cpu and disk space to have to space the files first.