



EEEMCal-BIC gaps study update

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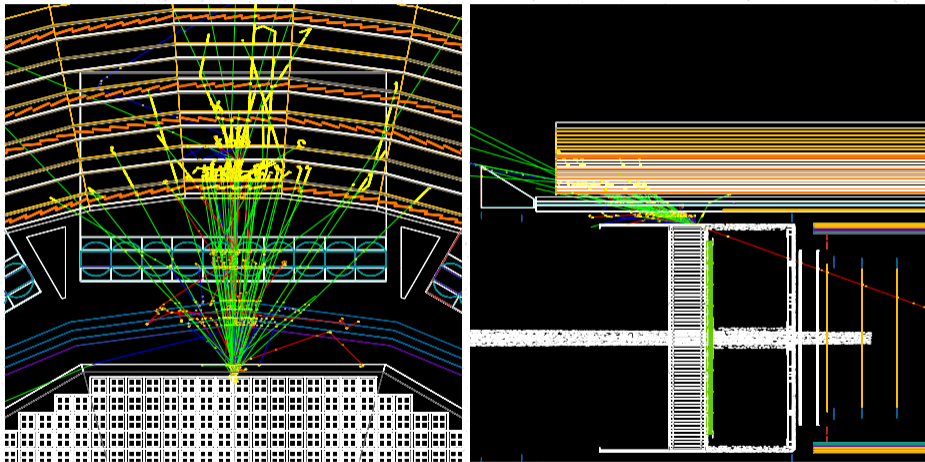
This continues a study that was shown last February.

Source code for this study is available in the benchmark

https://github.com/eic/detector_benchmarks/tree/master/benchmarks/ecal_gaps

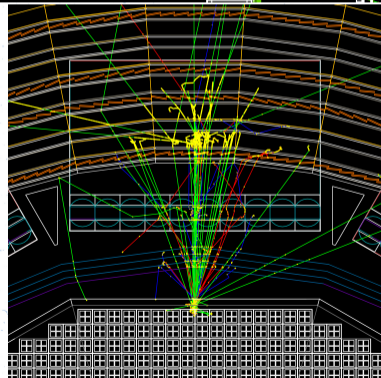
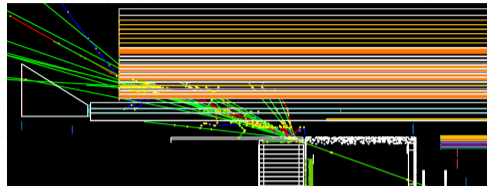
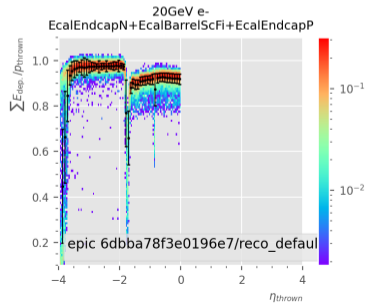
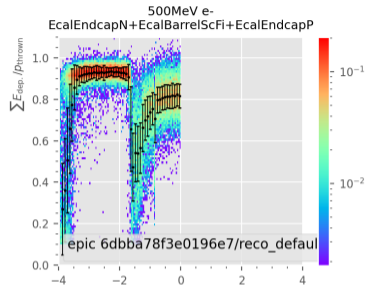
Event display

5 GeV e^- at $\eta = -1.75$, epic 24.05.0

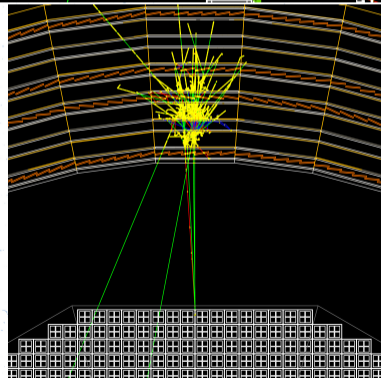
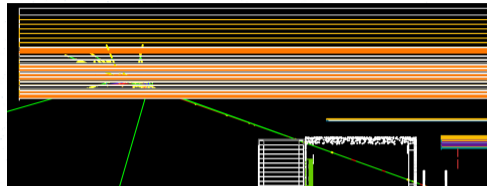
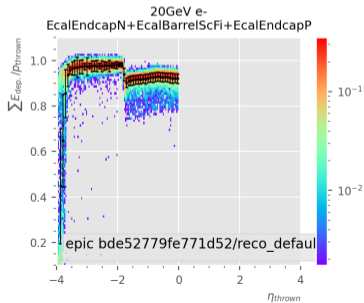
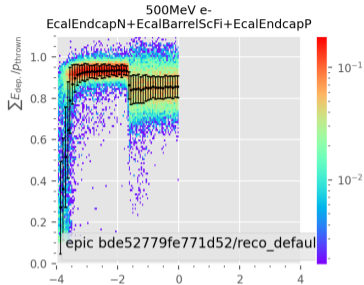


e^- , e^+ , proton, γ , neutron, π , interaction vertices are also marked in yellow

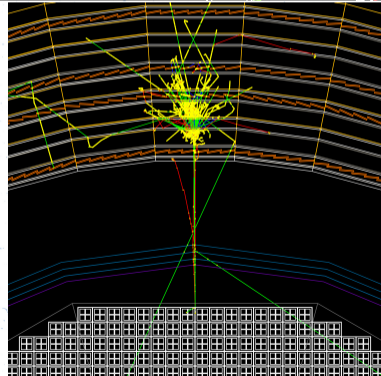
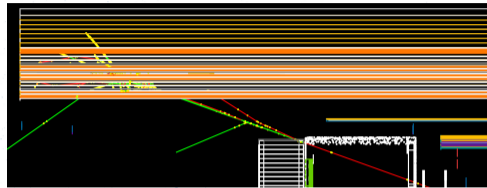
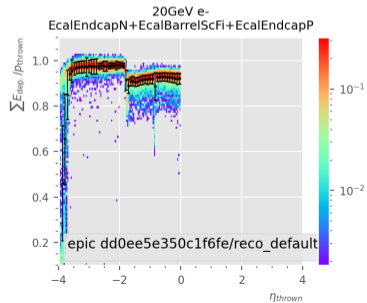
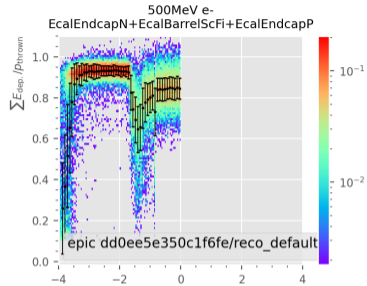
Baseline detector



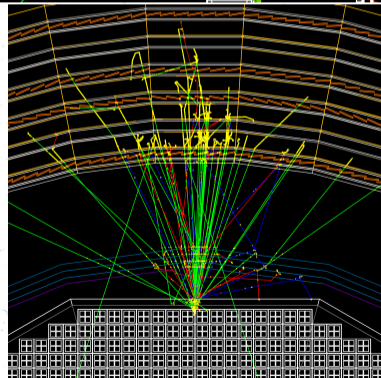
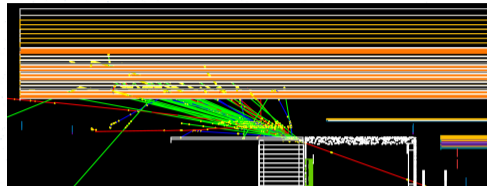
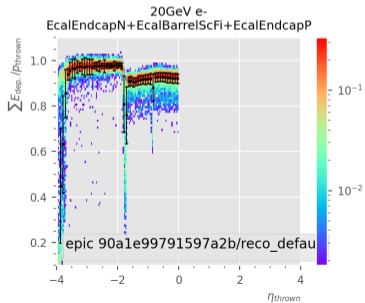
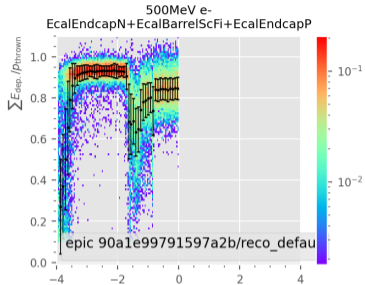
No dirc, extended barrel ecal, no supports



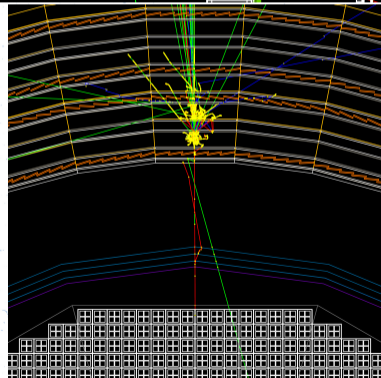
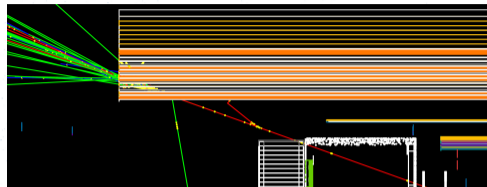
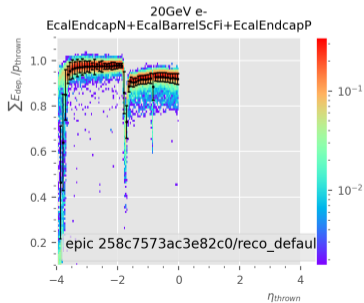
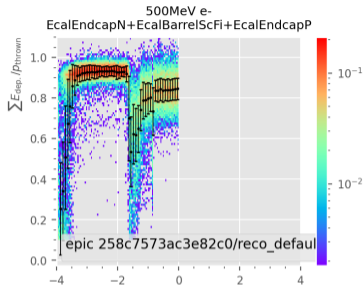
Add back services



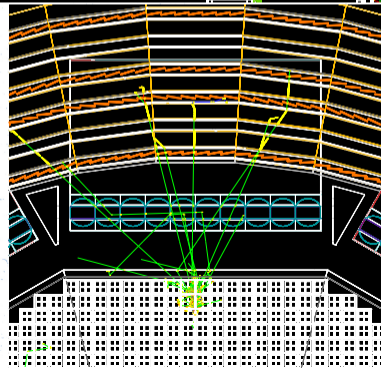
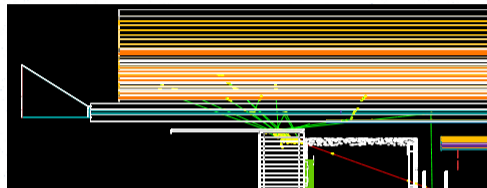
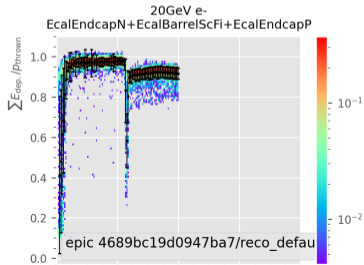
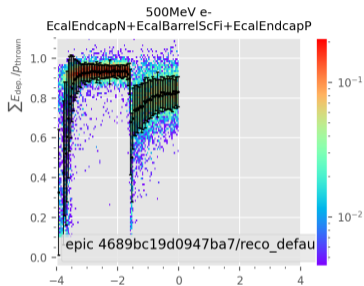
Add back outer frame



Remove outer frame, shorten barrel ecal



Increase EEEMCal outer radius from 65 to 69 cm, no supports



Conclusion

- » Gap at $\eta = -1.75$ corresponds to early radiation start on the steel support frame
- » BIC acceptance + shallow angle effects are comparable to support frame effect