Trigger simulation progress

- Large data sets done (/hps_data/meeg/lcio/v3pt1/); background rates check out
- A' efficiency with time evolution done
- Background trigger rates and A' efficiency are not significantly affected by:
  - FADC sum resolution (use 80 MeV, for a full range of 2.6 GeV)
  - Clusterer thresholds (use 100 MeV for seed and add thresholds)
  - FADC threshold (use 5 MeV for now, still need to nail down)
- Overlaying A' with beam background adds some A' triggers (triggers on 1 background cluster+1 A' cluster) and removes others (time walk/crystal dead time)

Trigger rates and efficiencies

Sample	Bunch count	Trigger count	Rate (kHz)
Geant4+tridents	5×10^7	3404	34
EGS5+tridents	5×10^6	138	14

- 10^4 A' events at each value of A' mass, spaced by 1000 ns (500 bunches)

A' mass	Trigger count	Acceptance
50 MeV	1023	10.2%
75 MeV	1881	18.8%
100 MeV	1817	18.2%
150 MeV	740	7.4%
200 MeV	308	3.1%
250 MeV	220	2.2%

Trigger monitoring

- Per-crystal scalers:
  - Hits seen by trigger system
  - Cluster seed count
  - Cluster add count
  - Trigger count
- Trigger scalers: count of cluster pairs passing each trigger cut