

Software update

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Crosstalk + noise implementation

- (1) Crosstalk adds energy to every nearest neighbor in same layer (many new hits created)
- (2a) Noise added to every hit (direct or crosstalk), according to some noise distribution
- (2b) Generate some number of noise-only cells (**empty** cells only). The number of noise-only cells determined by combining the noise distribution and a threshold
- Threshold – either (3) external or (2c) combined

Crosstalk + noise implementation status

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Working and tested

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Working and tested

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Need to implement a good way to calculate the number of noise-only cells

- Threshold – either (3) external or (2c) combined
(3) works. (2c) is not needed, but may provide some speed-up

Software status report

Overall goal: detector optimization and PFA studies for Snowmass (August)

- org.lcsim: Official framework for LCIO analysis in java
 - crosstalk, noise revamp (in progress)
 - Next steps:
re-evaluation of hot/dead channels and SiPM saturation modifiers
documentation update
- Nonprojective geometries
 - org.lcsim / compact geometry description (started)
 - SLIC / LCDD (Jeremy)
- PFA development
 - Cluster interface into clustering algorithms Superlayers (old) and neighborhood density (new) (requires nonprojective geometry)
 - Investigate existing tools for PFA integration
- LCDG4 maintenance
 - EMCal cell staggering (Shenjian, Boulder) (tests before CVS commit)
 - Multiple primary vertices (diagnostics)