ECAL Data quality

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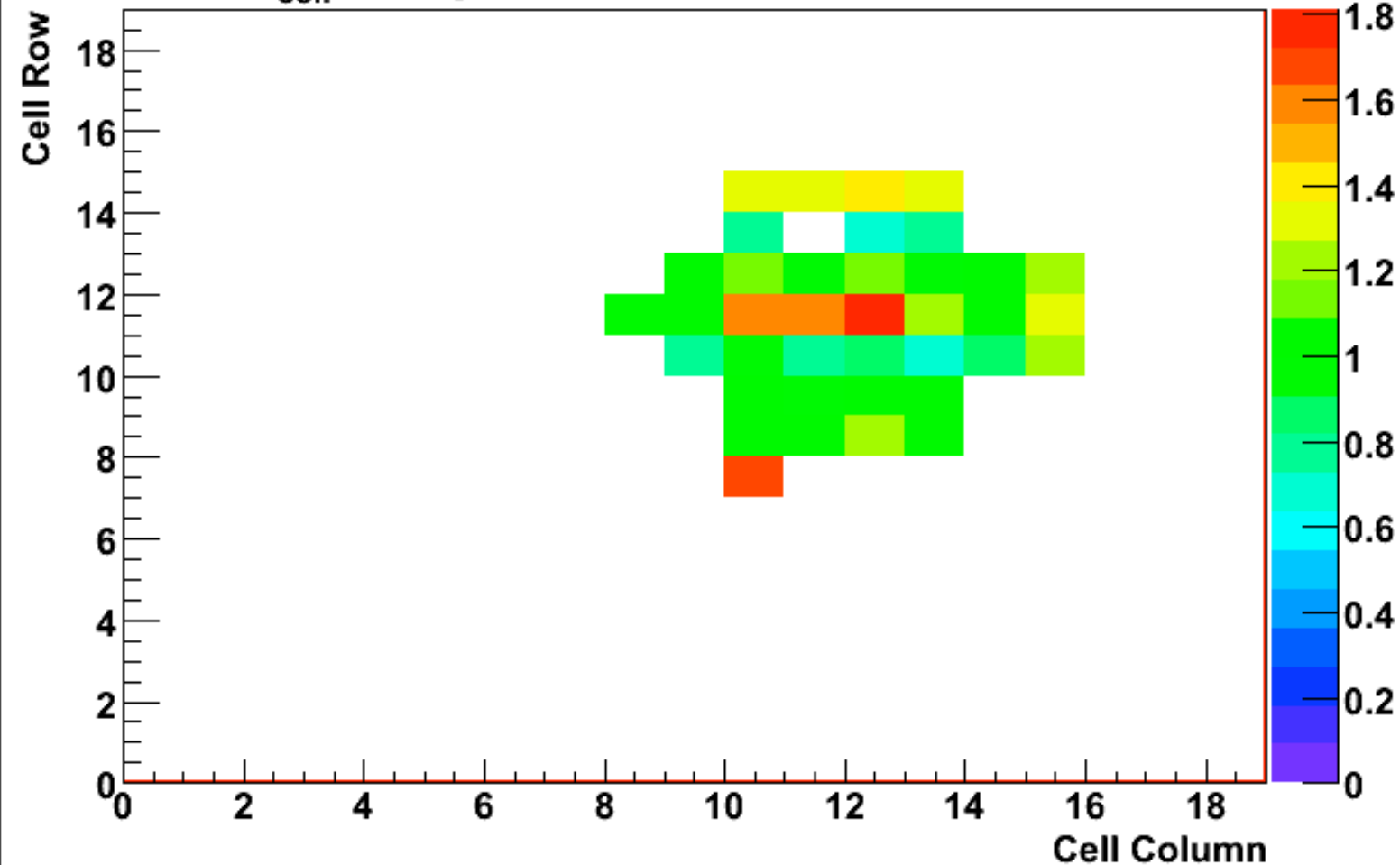
$P(E_{cell} / Moy\{E_{neigh}\} > 1)$ layer 15

Cell   Neighbours
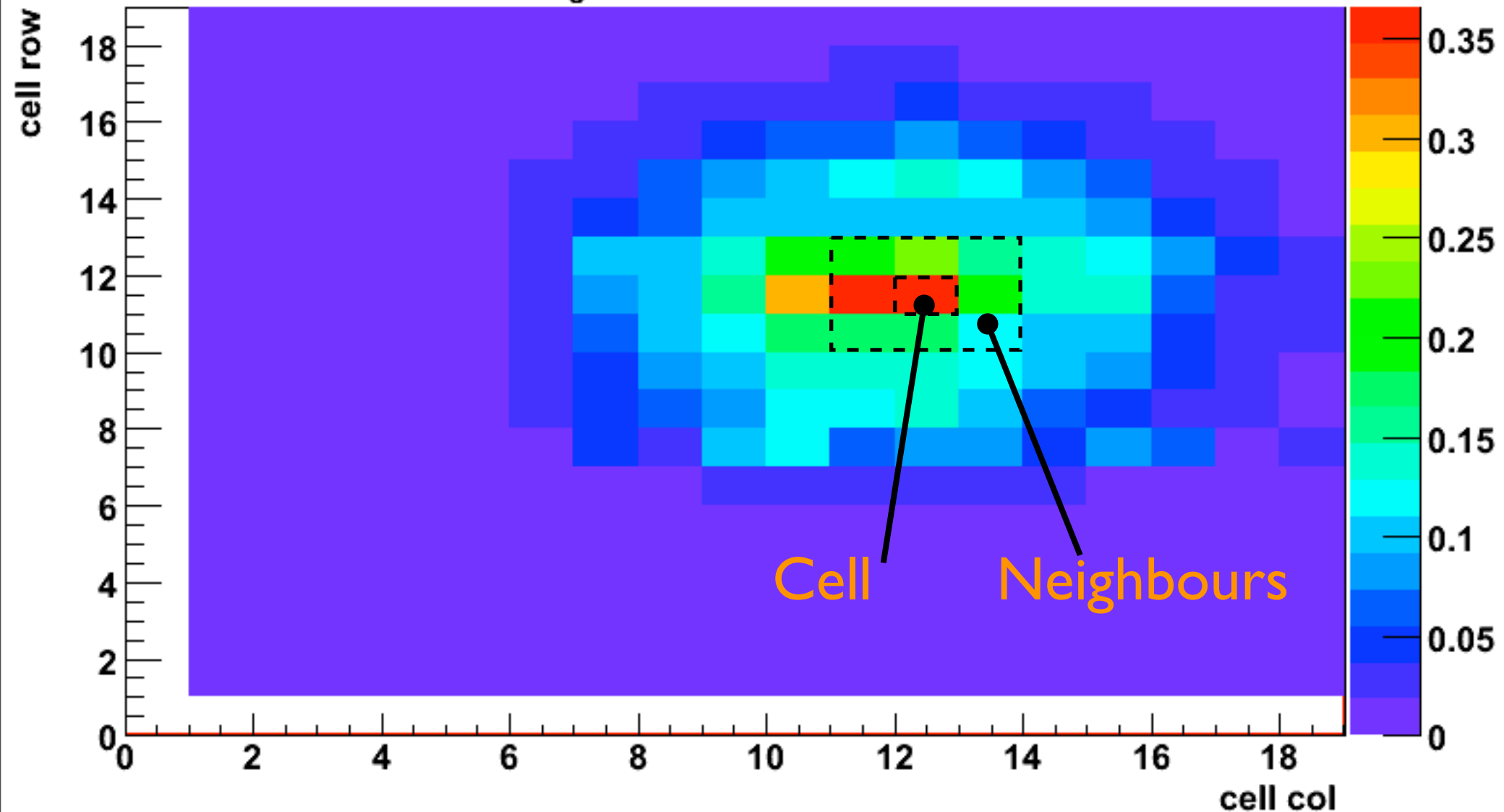
Noisy cells

Keep just the cells for which $P(E_{cell} / E_{neigh} > 1) > 0.1$

$\Delta P(E_{cell} / E_{neigh} > 1)$

$$\frac{P(E_{cell} / E_{neigh} > 1)}{\langle P(E_{cell} / E_{neigh} > 1)\rangle_{neigh}}$$

Limit value of this ratio not yet optimized

Need to distinguish the effect of the going through of the particles

Dead cells

Keep just the cells for which $P(E_{cell} / E_{neigh} >1) = 0$

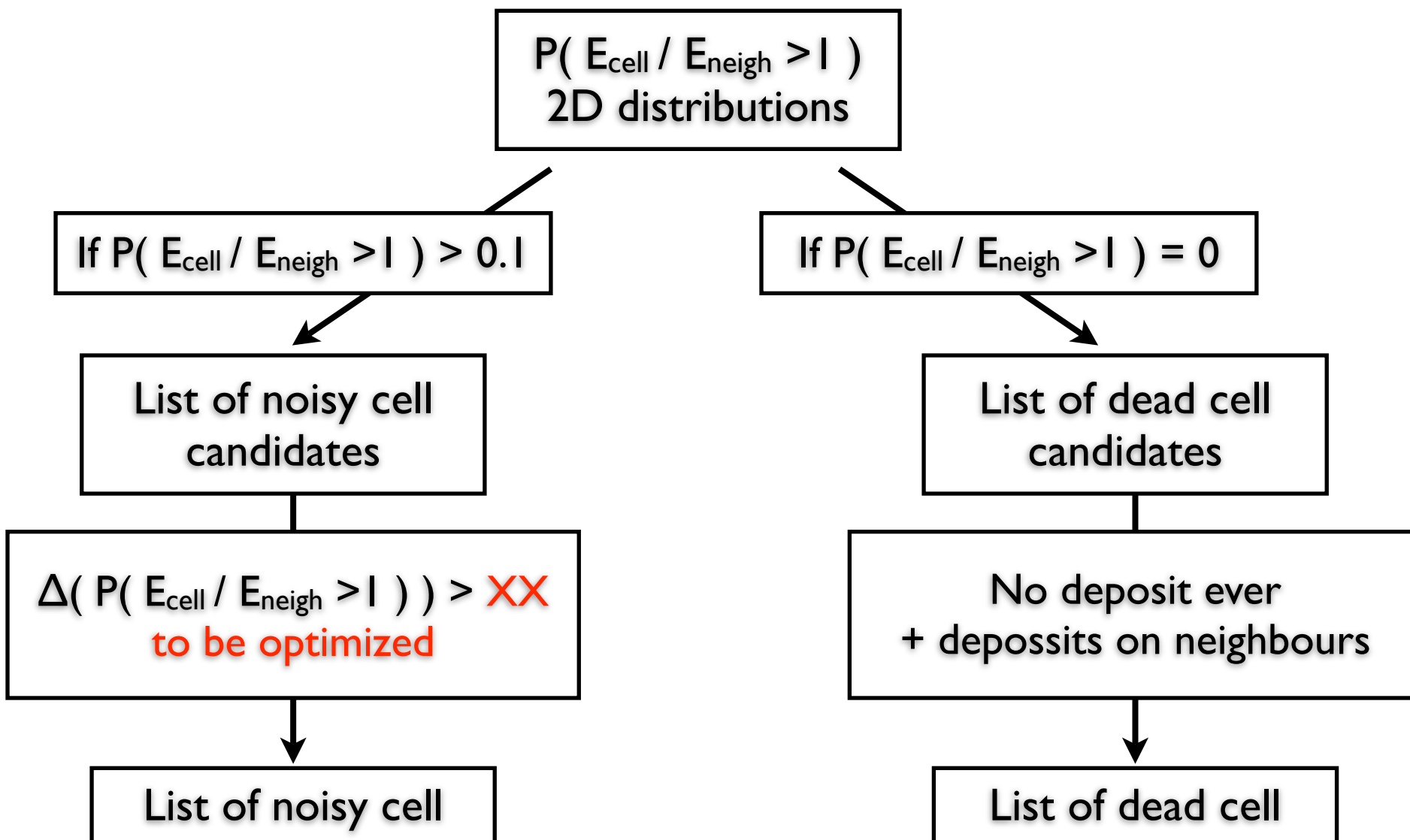Check for which of those cells no deposit are ever recorded during the run.

Check also that energy deposits are recorded at least 1000 times (1000 events) for their neighbours.

If a cell and its neighbours record no deposits, this cell is technically dead for this run but it doesn't mean that it is not working properly.

Identification of noisy cells & dead cells
- Overview -

P(E_{cell} / E_{neigh} >1)
2D distributions

If P(E_{cell} / E_{neigh} >1) > 0.1

If P(E_{cell} / E_{neigh} >1) = 0

List of noisy cell candidates

List of dead cell candidates

Δ(P(E_{cell} / E_{neigh} >1)) > XX
to be optimized

No deposit ever
+ depossits on neighbours

List of noisy cell

List of dead cell

Information storage

Is there any process to compare slcio files (like a "diff") already available ?

Input
SLCIO file

LCRunHeader changed:
+ *DeadCells*
+ *NoisyCells*

ID Process
(Marlin)

Output
SLCIO file

ROOT file:
Histo, Noisy cells
(TTree), Dead cells
(TTree)

Output Process
(Marlin)