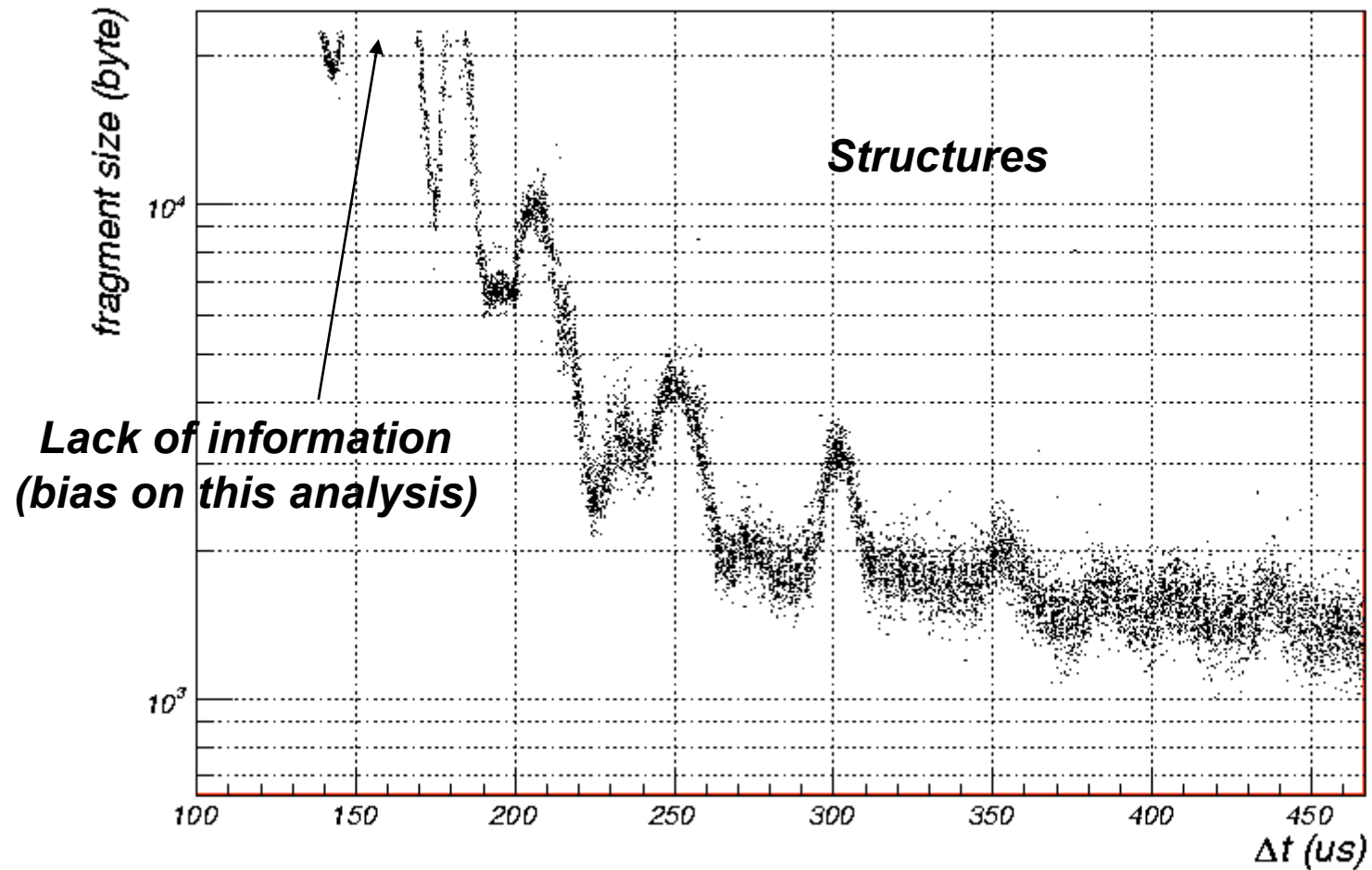


The Event Size Problem at Low Δt :
Full Tracker Cosmic Ray Data

Note: this is a 'work document': results are not
complete nor final

Alberto / Giovanni / Paolo / Philipp

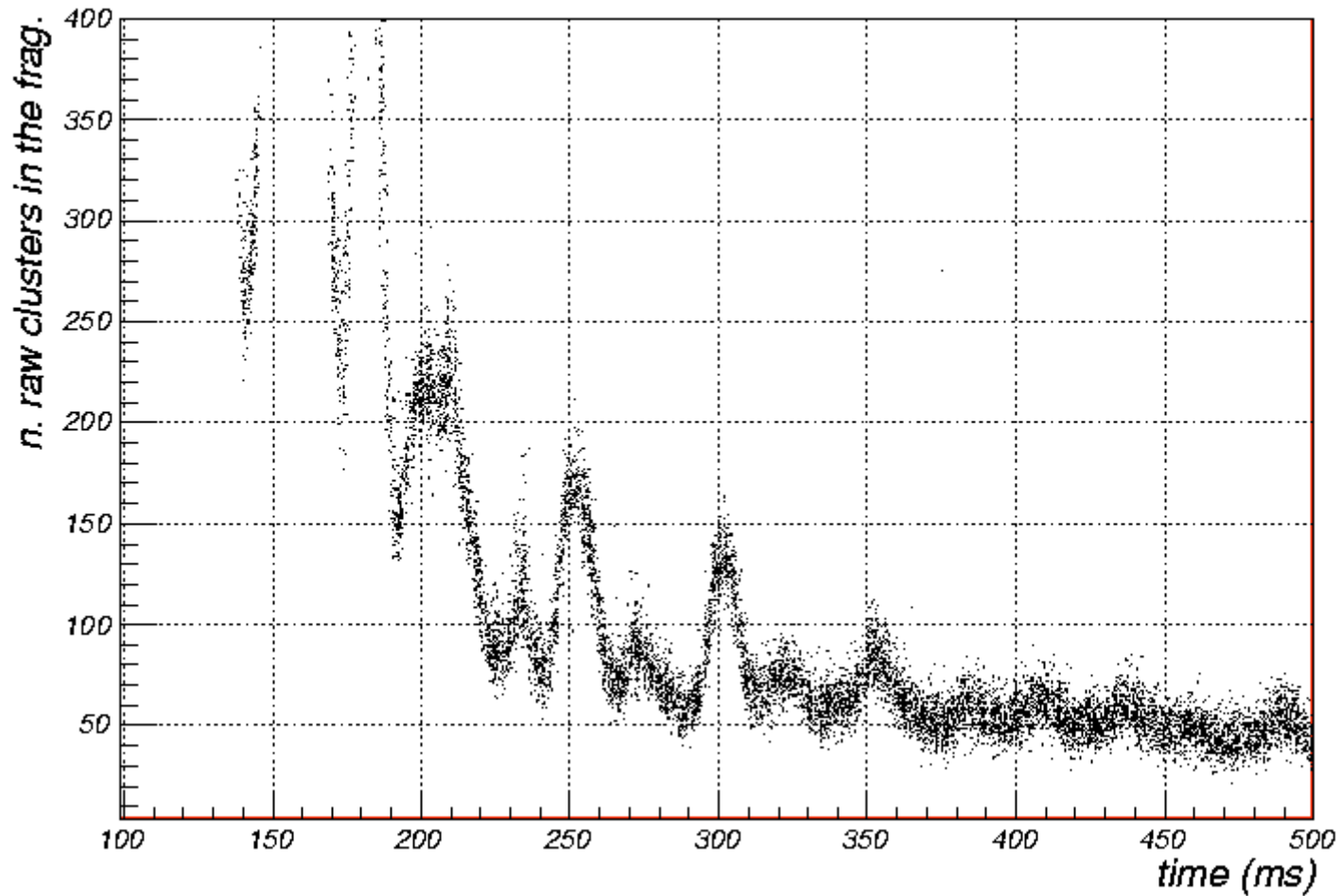
Event Size



in the future

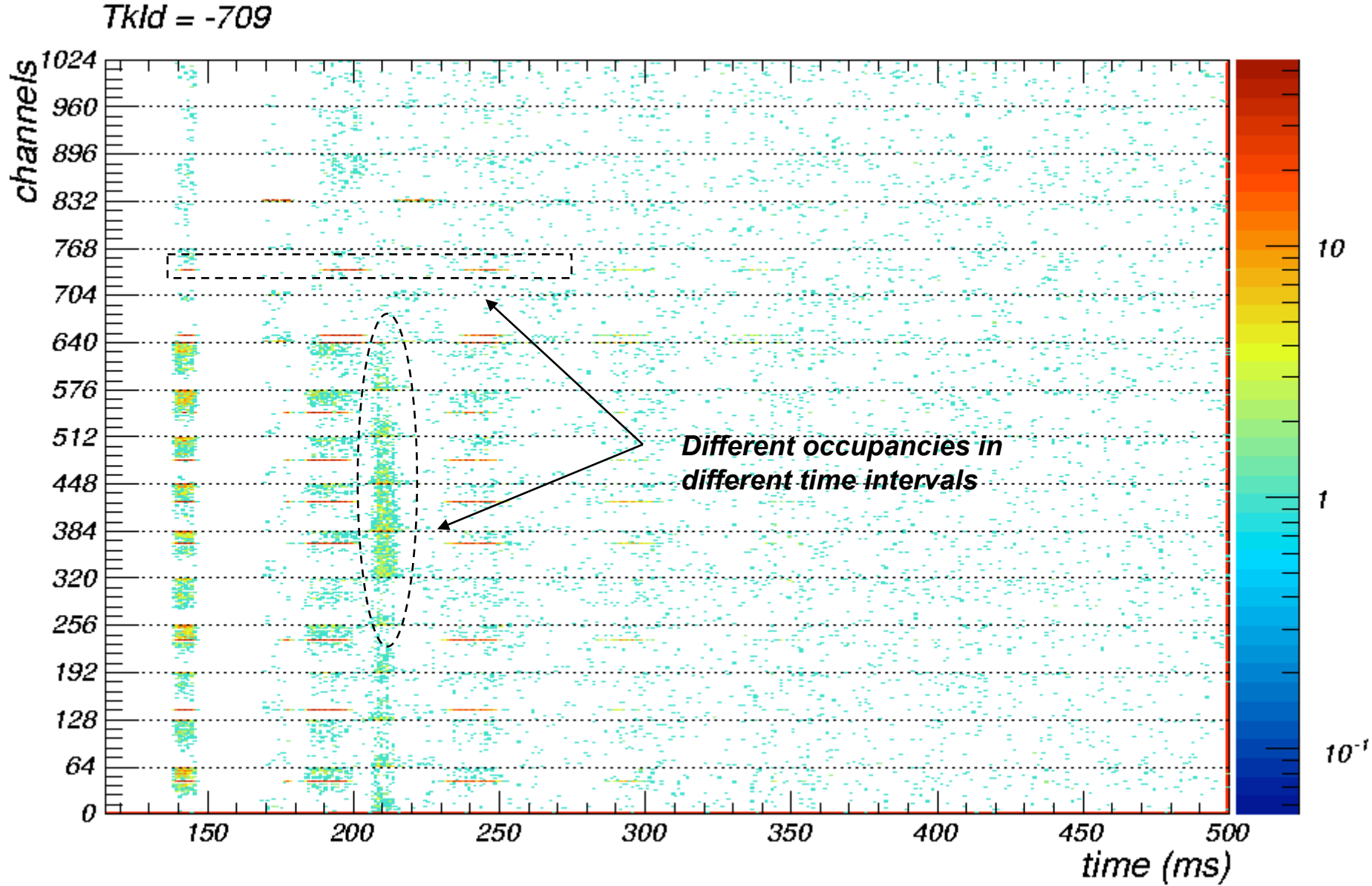
$$\sum_{T-Crate=0,7} \{ 2 + \sum_{Ladder=0,23} \{ 2 + \sum_{Clus} CSize \} \} = \cancel{400} + \sum CSize_{T,L,C}$$

Number of Raw Clusters

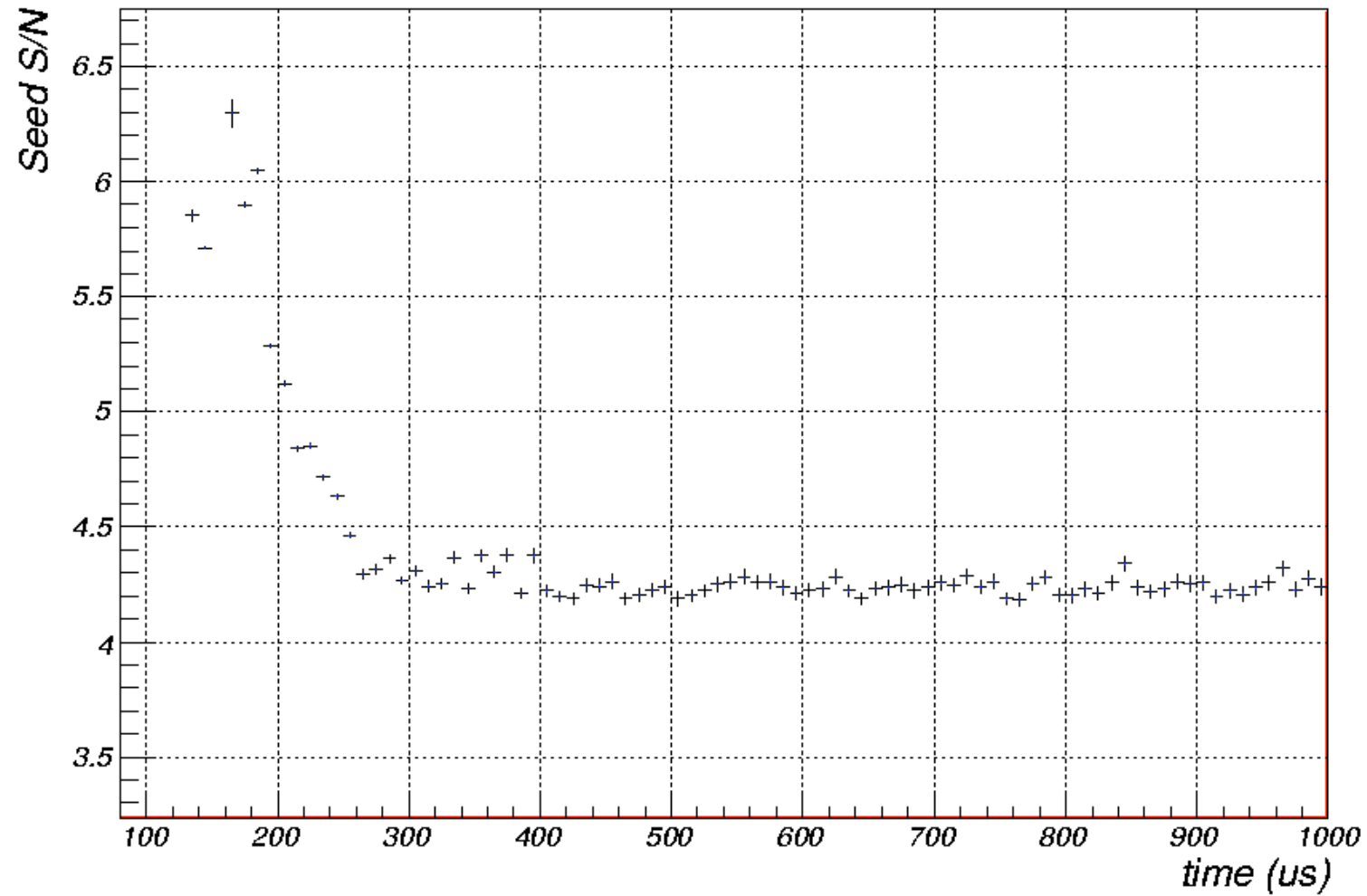


Many small clusters (less than 10 strips)!!
We have many seeds → Occupancy

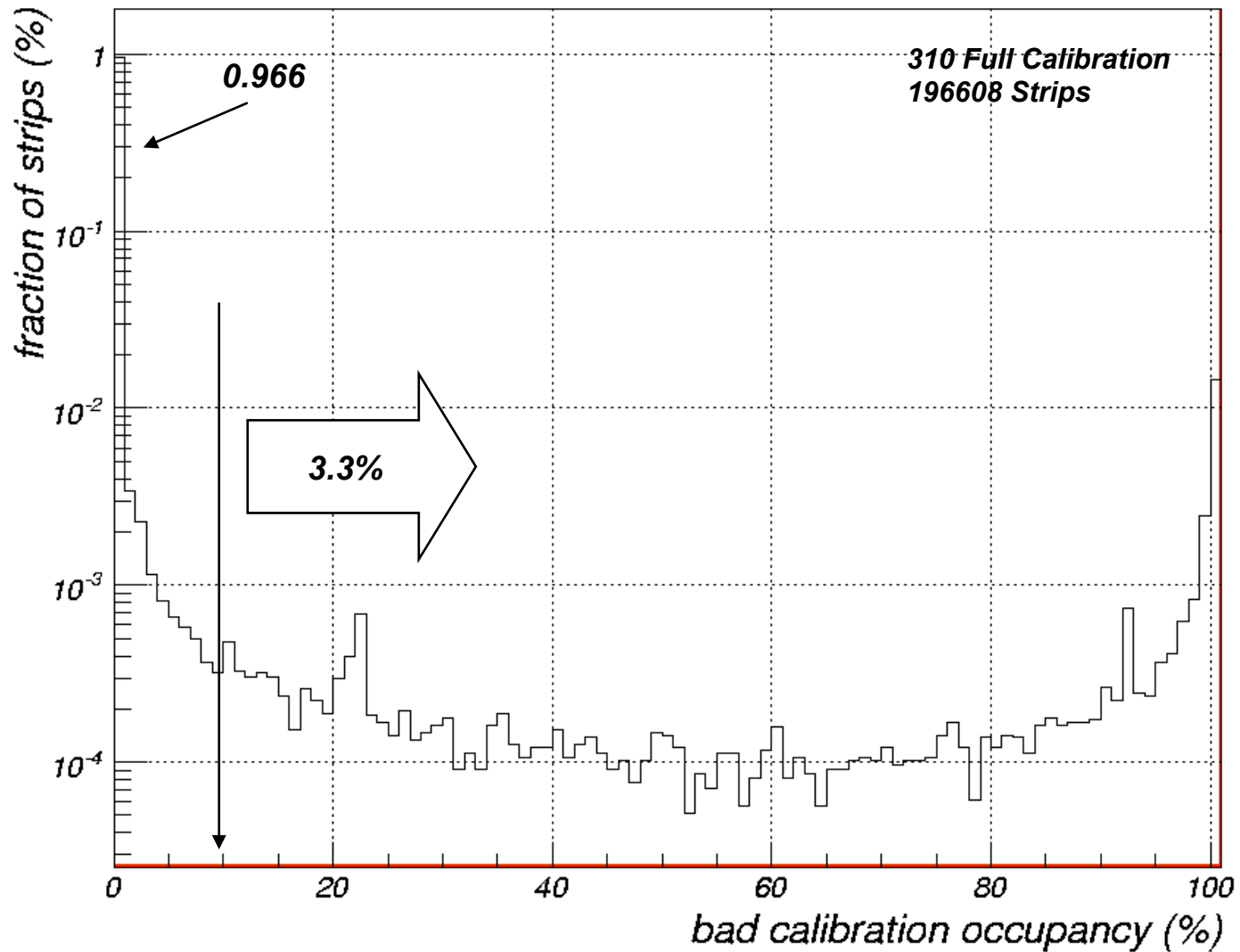
Occupancy VS Delta T



Seed signal to noise VS Δt

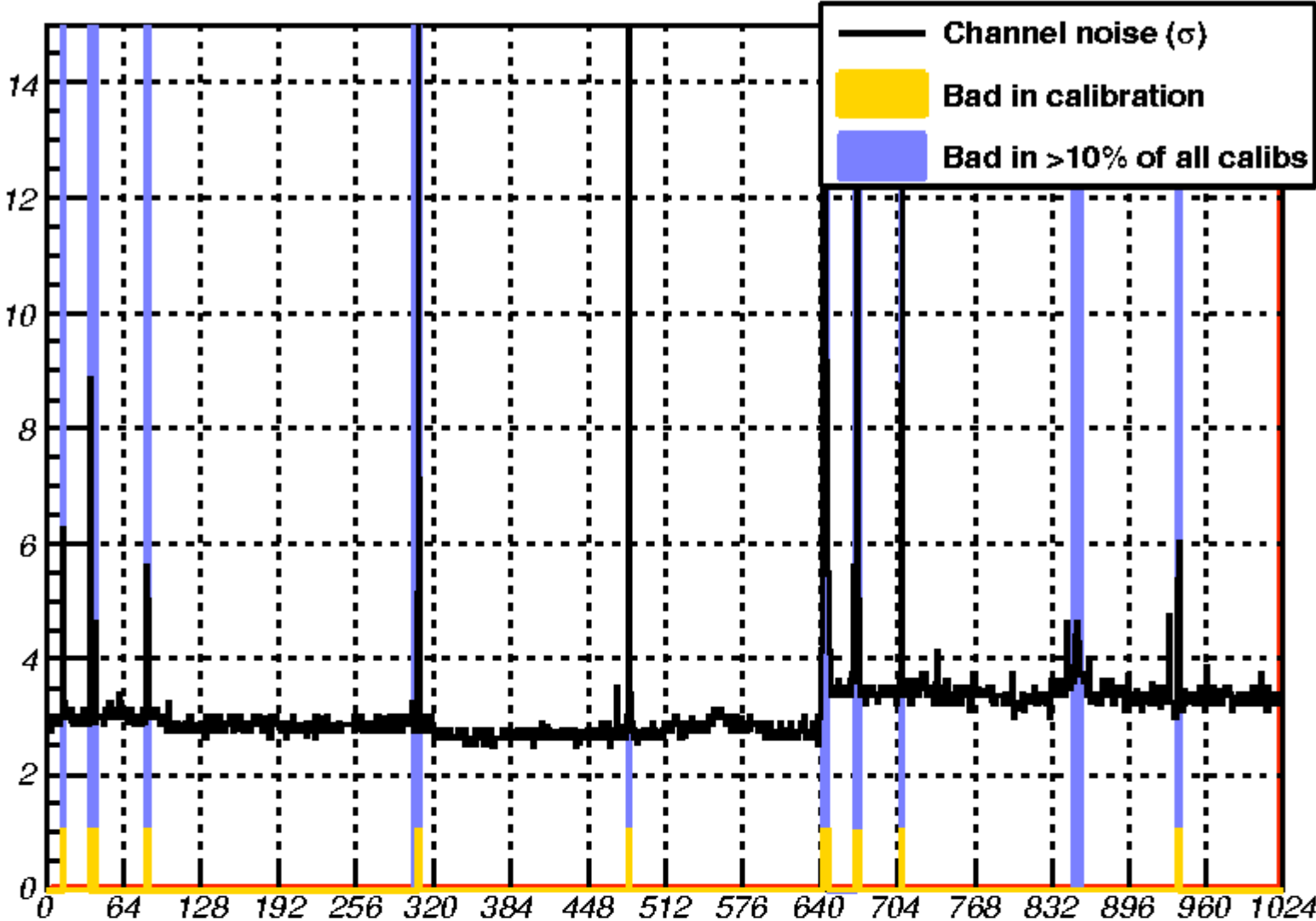


Bad Strip “Occupancy” in Calibration



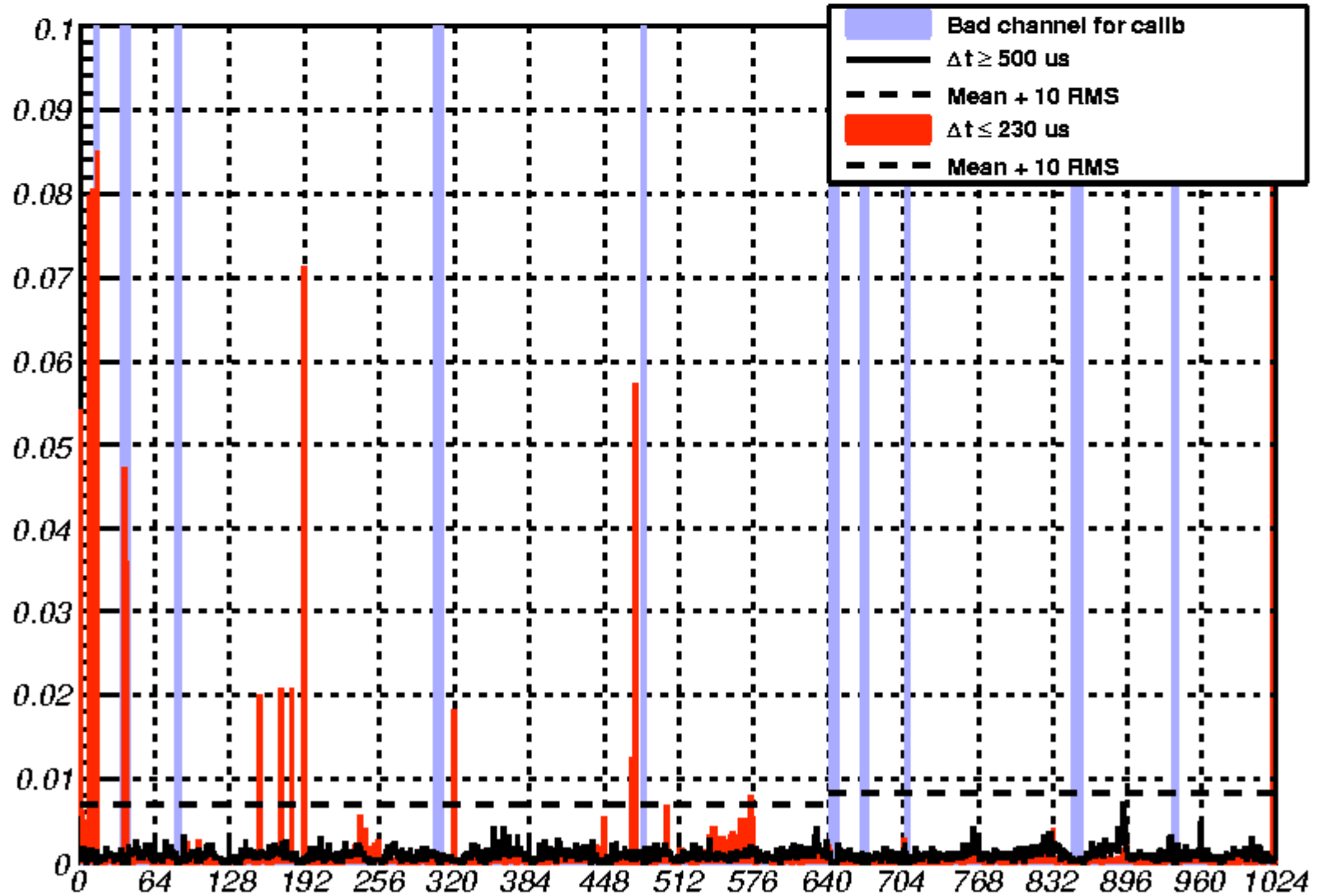
Each calibration has in mean 2.66 (0.06) % bad channels
The 98 (1)% of these strips is evaluated as always bad (occupancy > 10%)

Calibration and Calibrations



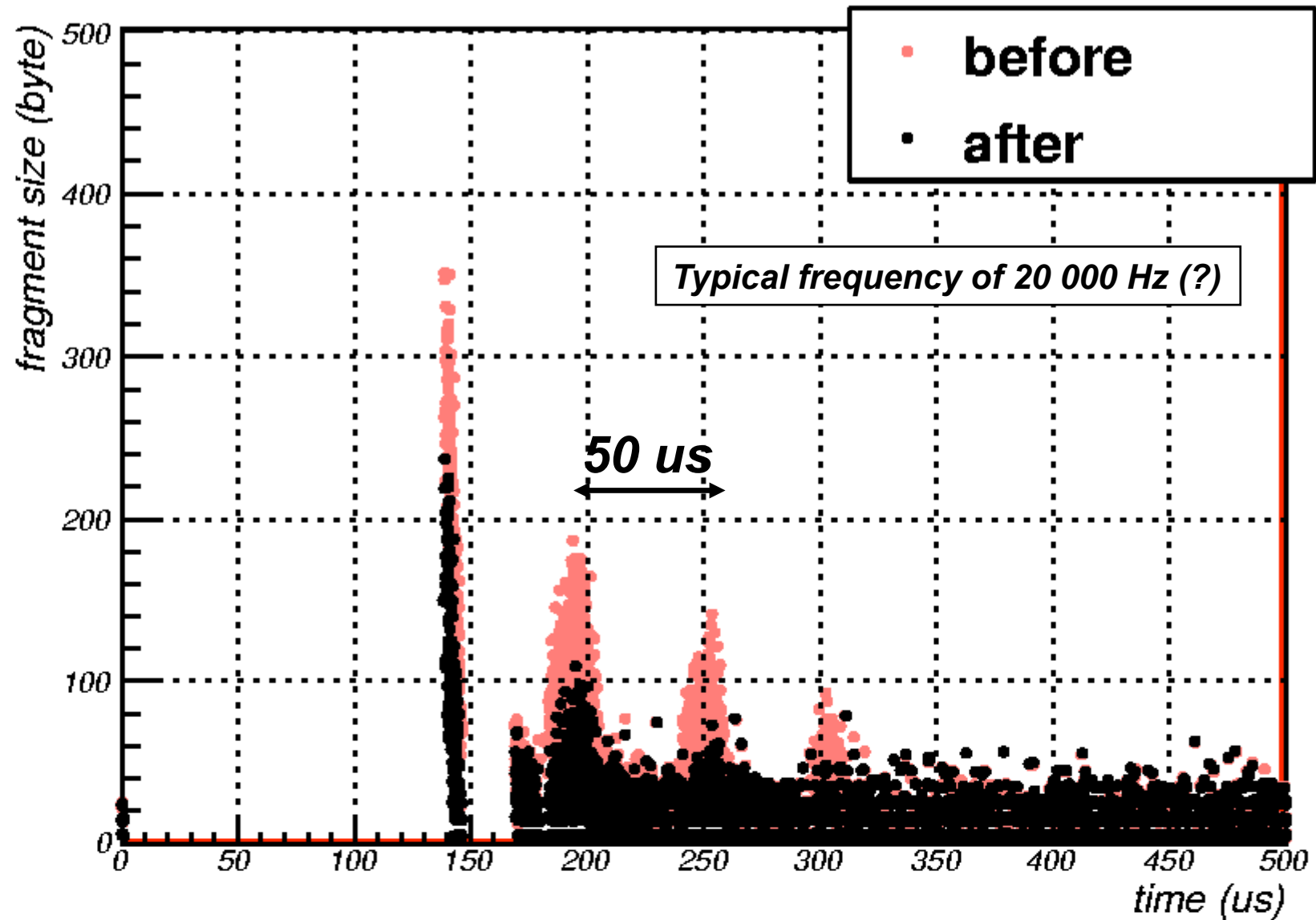
calibration bad channels fraction = 3.32 %

Calibration and Occupancy at Low Δt

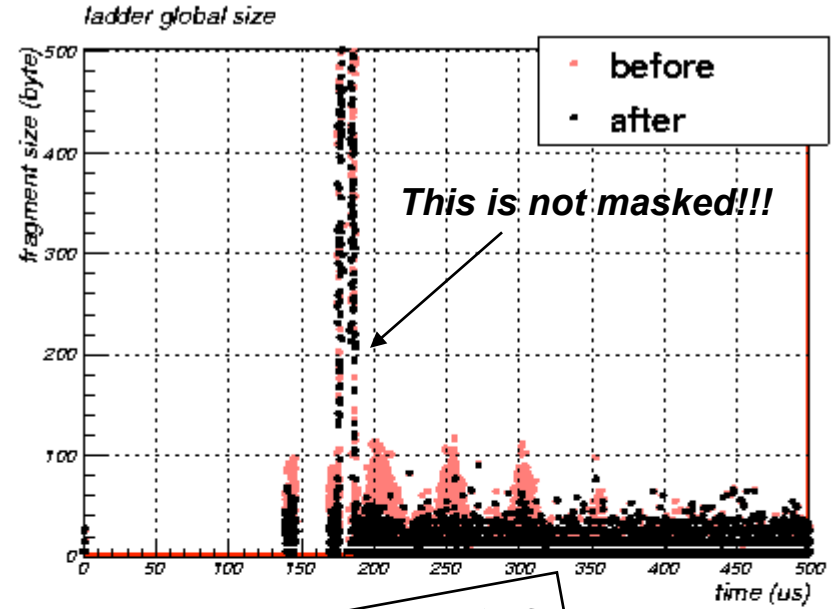
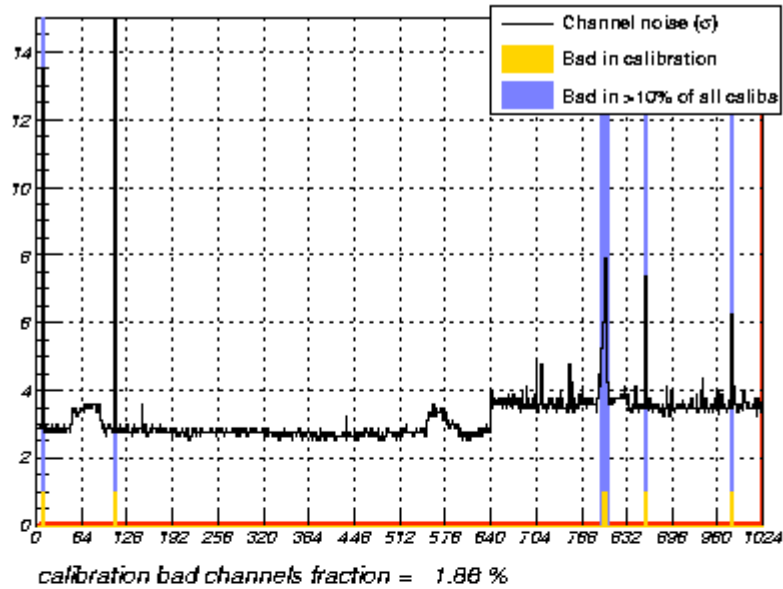


occupancy additional bad channels fraction = 1.27 %

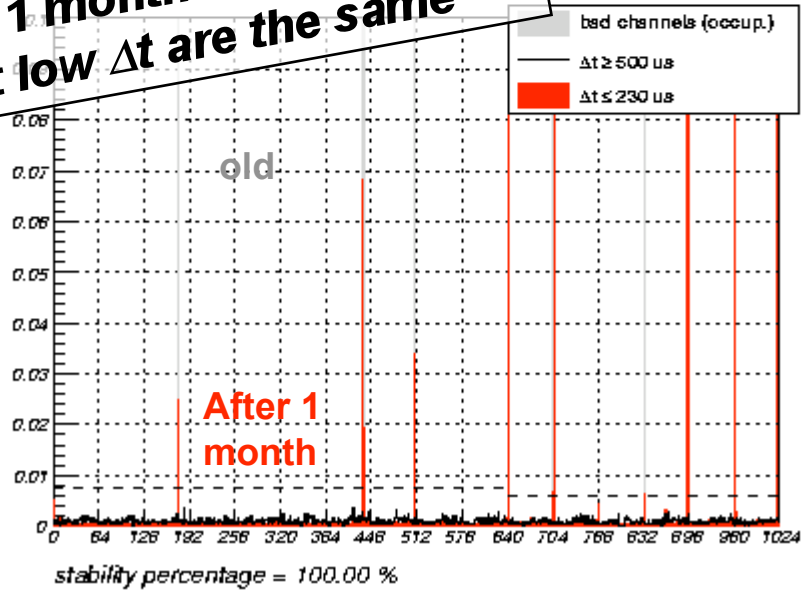
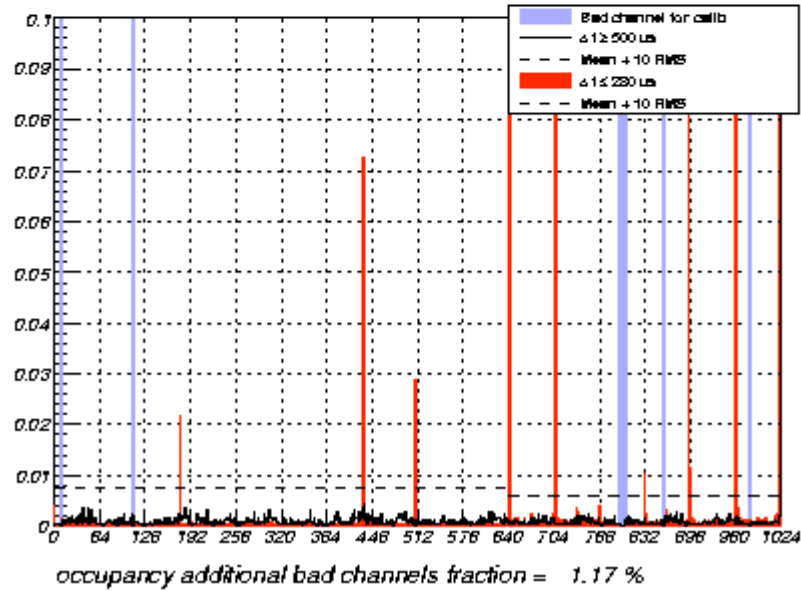
Ladder size after occupancy cut



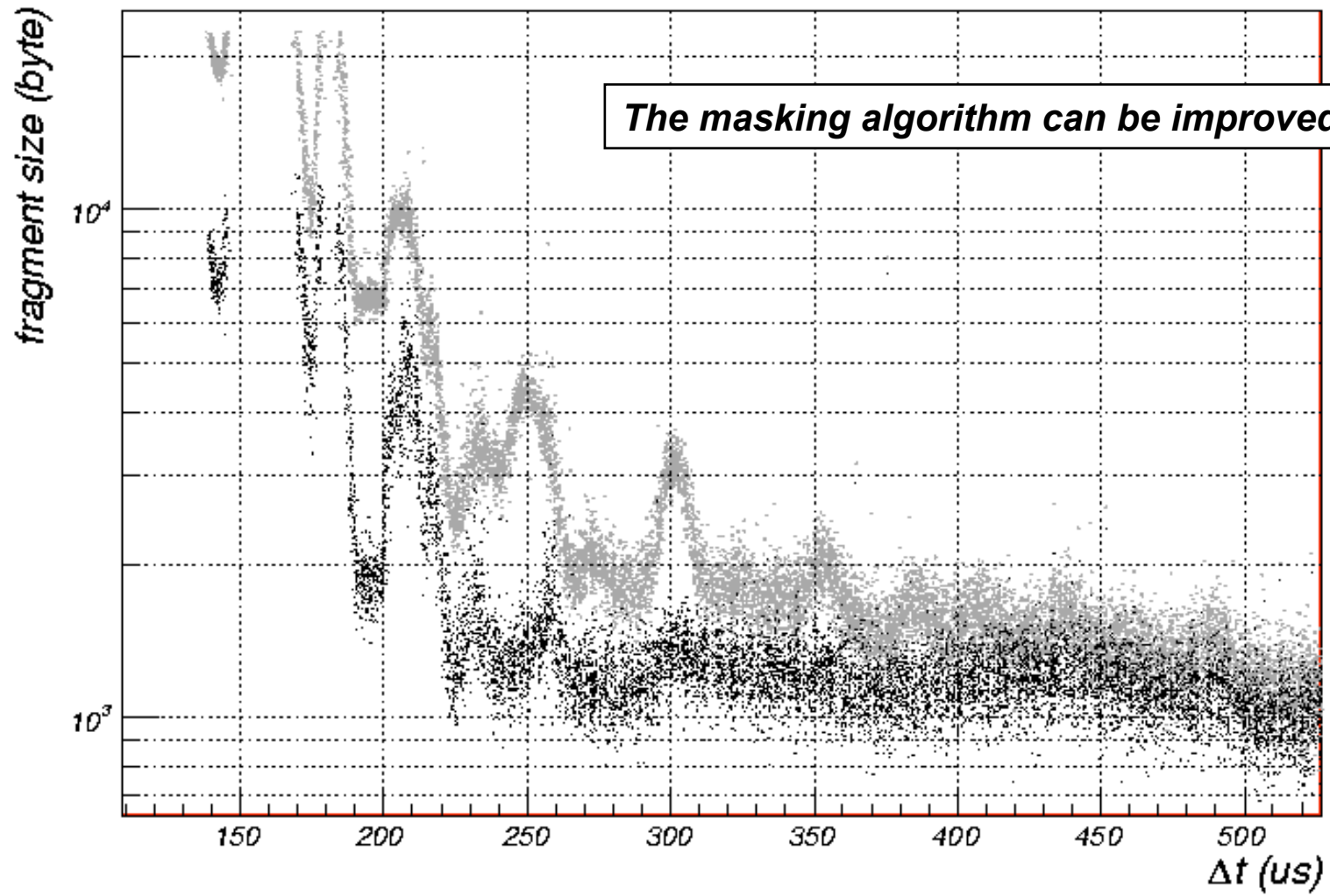
TkId = -104 HwId = 113 NSensors = 14



After 1 month the bad strips at low Δt are the same



Event Size After Occupancy at Low Δt Cut



Conclusions at this stage of the work

- *The Low Δt problem is caused by a small fraction of strips that have a bad behaviour at short Δt*
- *the new bad strips are:*
 - *not recognized in calibration*
 - *almost the same after one month*
 - *can be recognized with offline analysis*
- *more work in in progress in order to confirm the current results and to implement the proper actions to mitigate the problem*