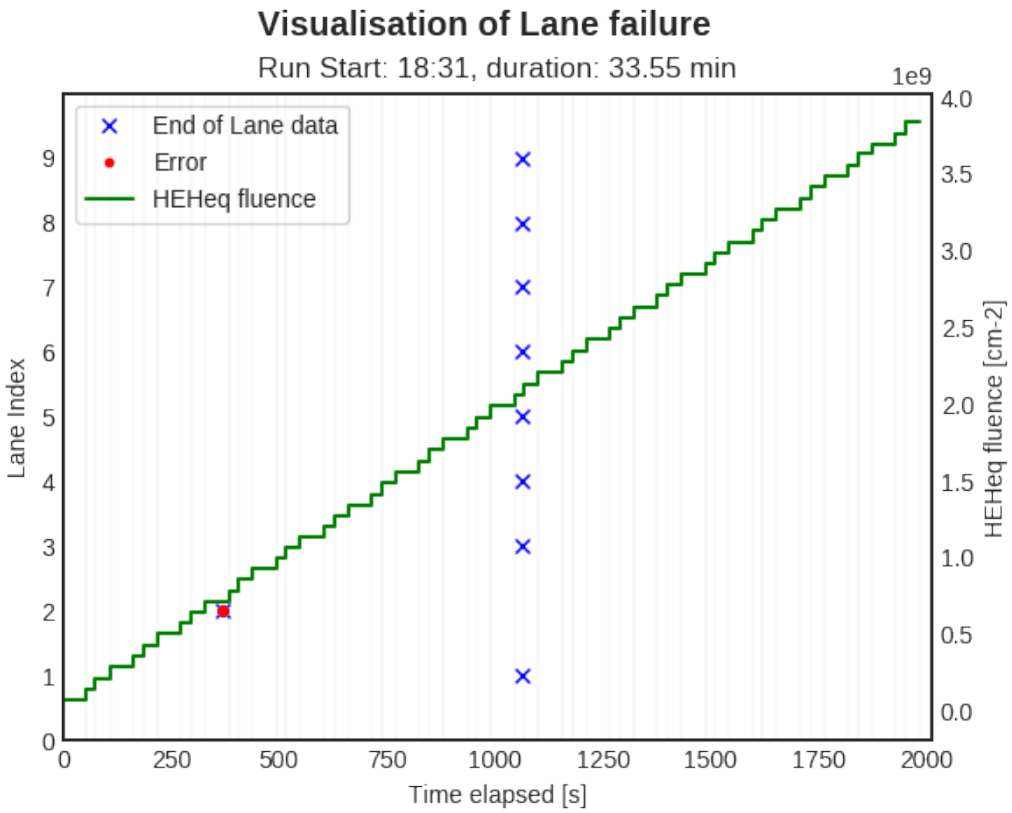
EVENT DATA ANALYSIS OF CHARM TESTBEAM

Summary

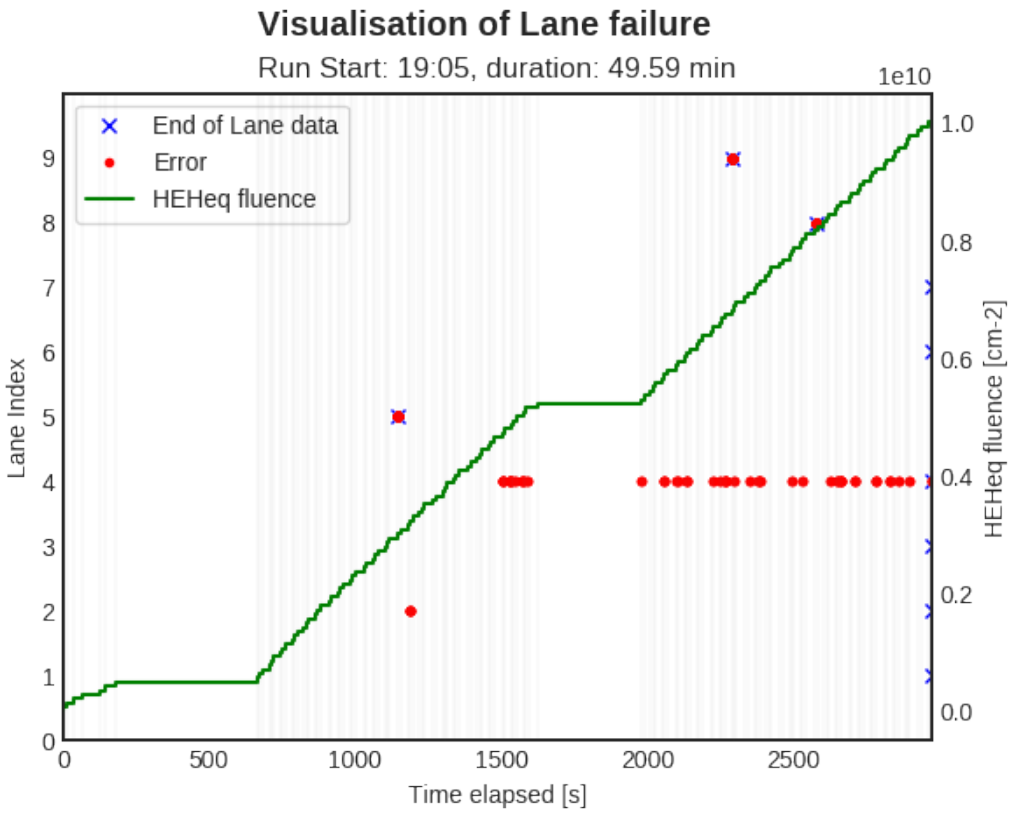
- Collected Results of 4 Runs
  - 2 short runs (< 5 min)
  - 2 long runs (> 30 min)
- Different events observed
  - Failure of all Lanes at ones
  - Failure of single lanes
  - Error bursts on single lanes
- First Estimation of Mean HEHeq Fluence To Failure for a lane structure
  - $3.04 * 10^{9}$ cm^{-2} ($\pm$ $1.1 * 10^{9}$ cm-2)

Run #1

- No Data from FPGA counters



Run #2


Visualisation of Lane failure
Run Start: 19:05, duration: 49.59 min
1e10
End of Lane data
Error
HEHeq fluence
Lane Index
HEHeq fluence [cm-2]
Time elapsed [s]
0
500
1000
1500
2000
2500
0.0
0.2
0.4
0.6
0.8
1.0

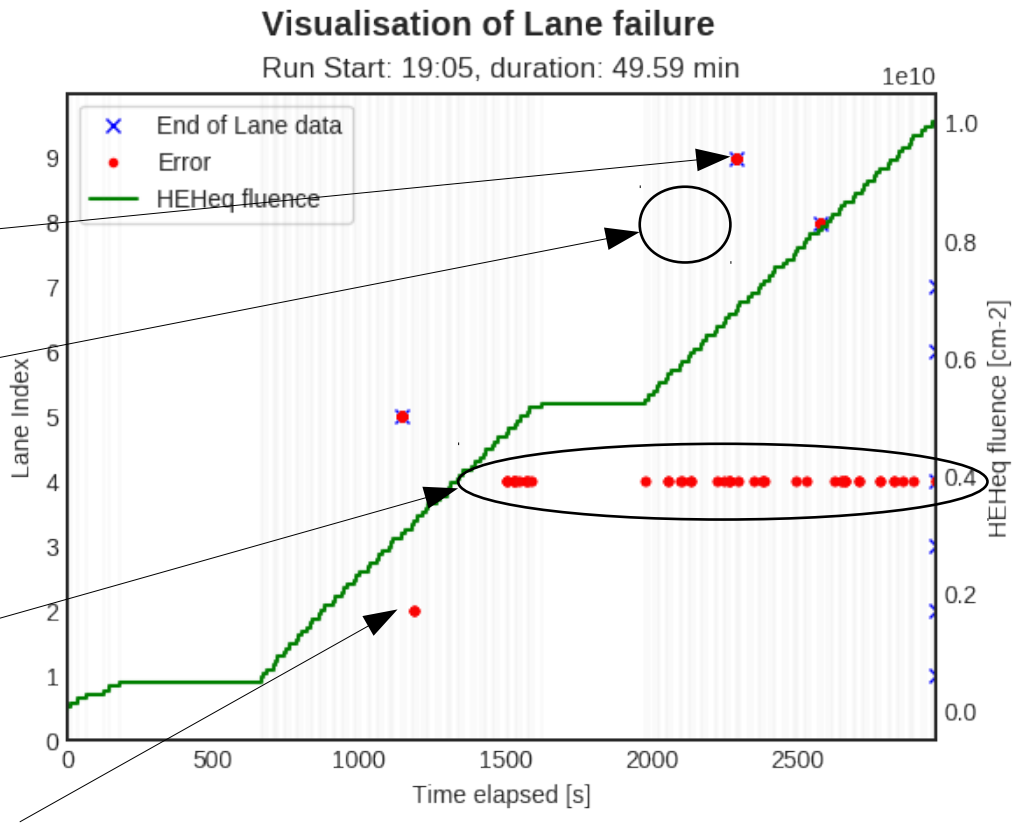
Run #2

Decoding Errors Detected

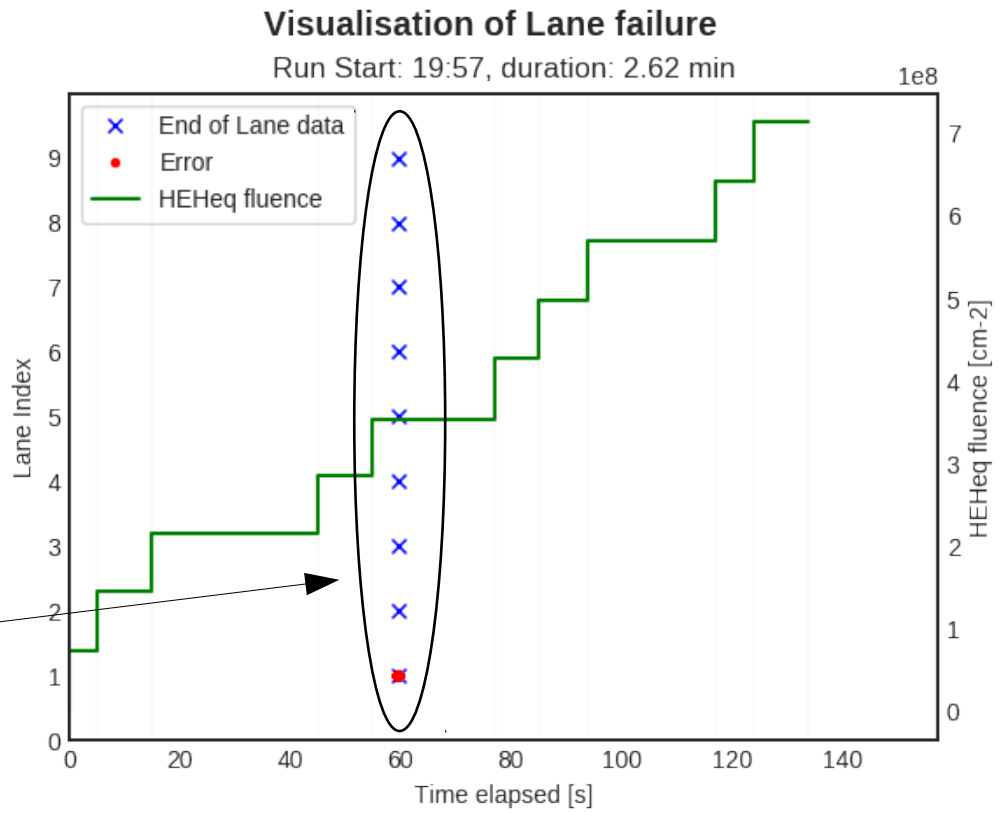
Decoding Errors Detected
Wrong time info?

CDR Loss of Lock Detected
Errors not detected in FPGA

Realign to Comma detected

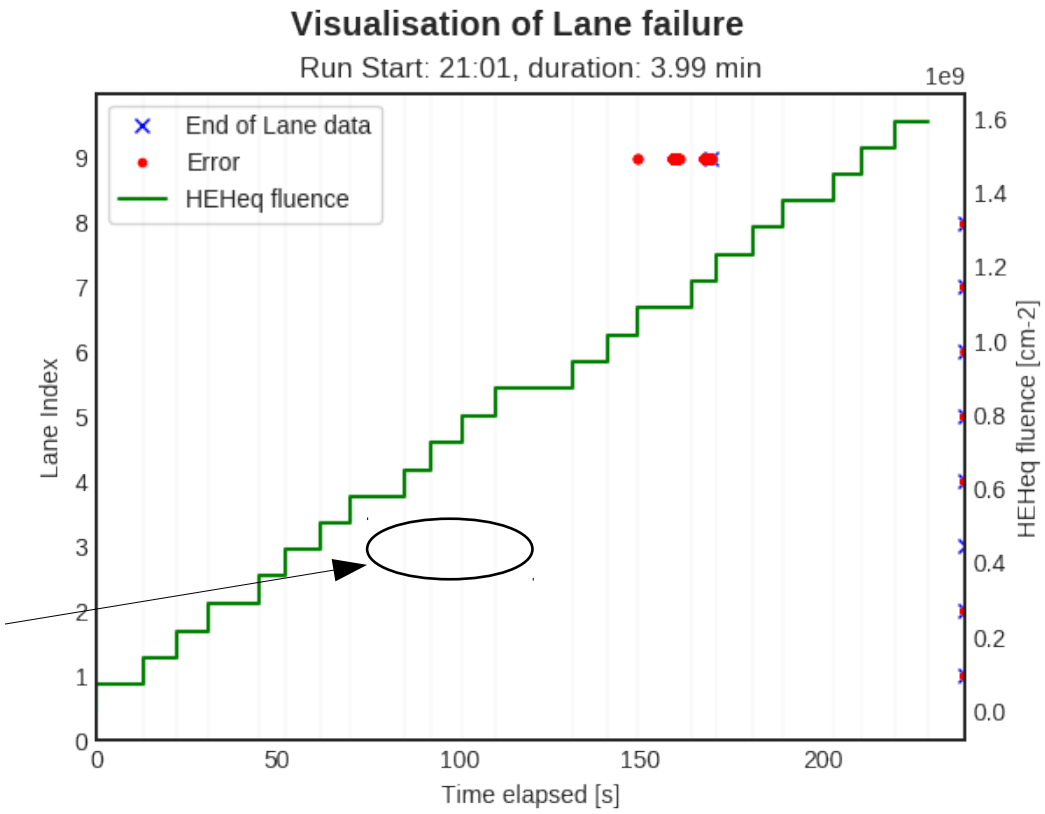


Run #3



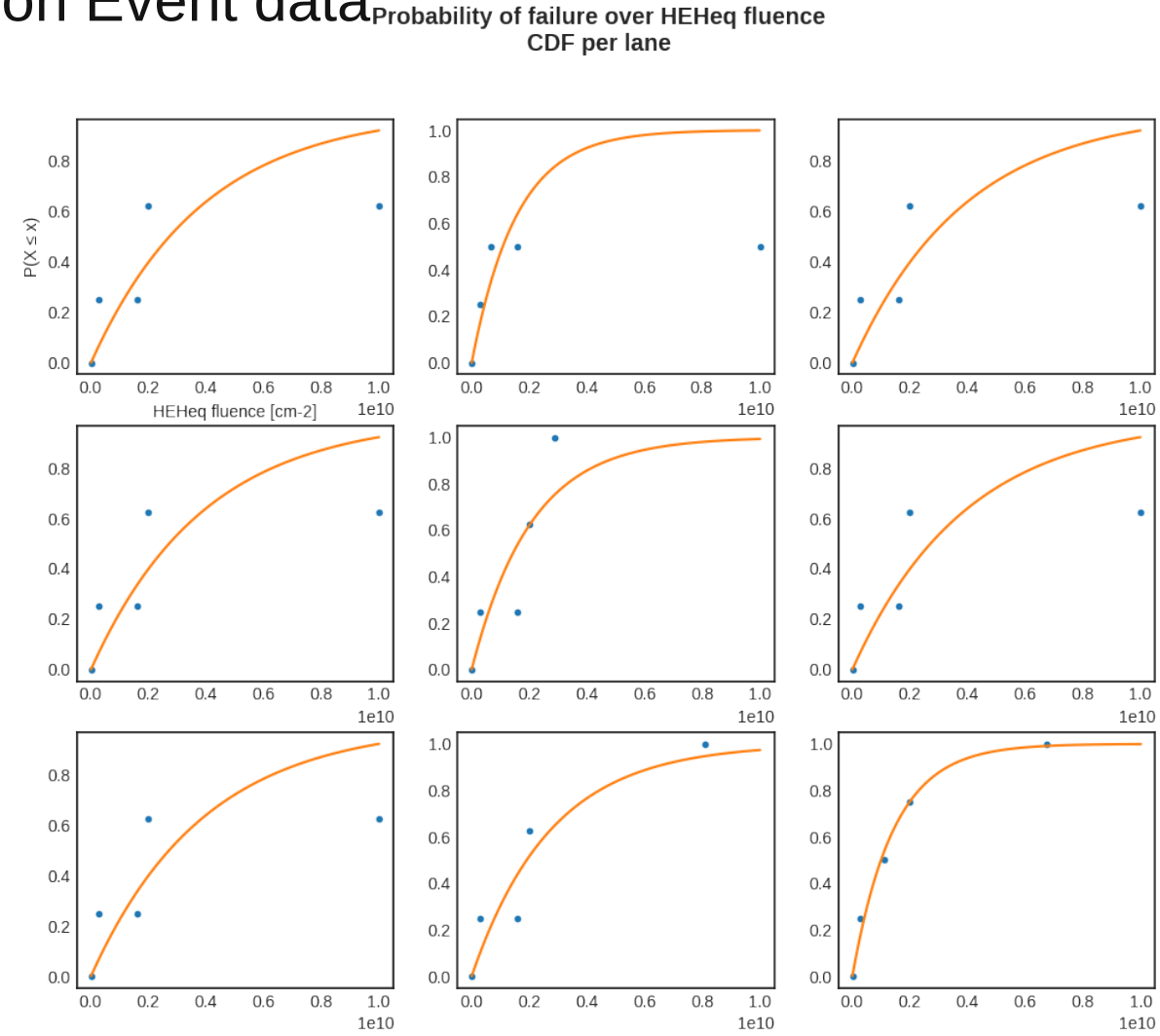
Fifo Full Count +
Fifo Overflow Count
Increase/Saturation

Run #4



Fifo Full Count Increase

Estimation of failure time of a single Lane (1)
Based on Event data



Estimation of failure time of a single Lane (2)
Lane Average + bounds