Probematic chips after irradiation in Sep 03 beamtest

- 20220170200010(S03) - Negative offset
- 20220170200447(S03) - Large Gain Spread
- 20220040200018(link1) - large s-curve wiggles

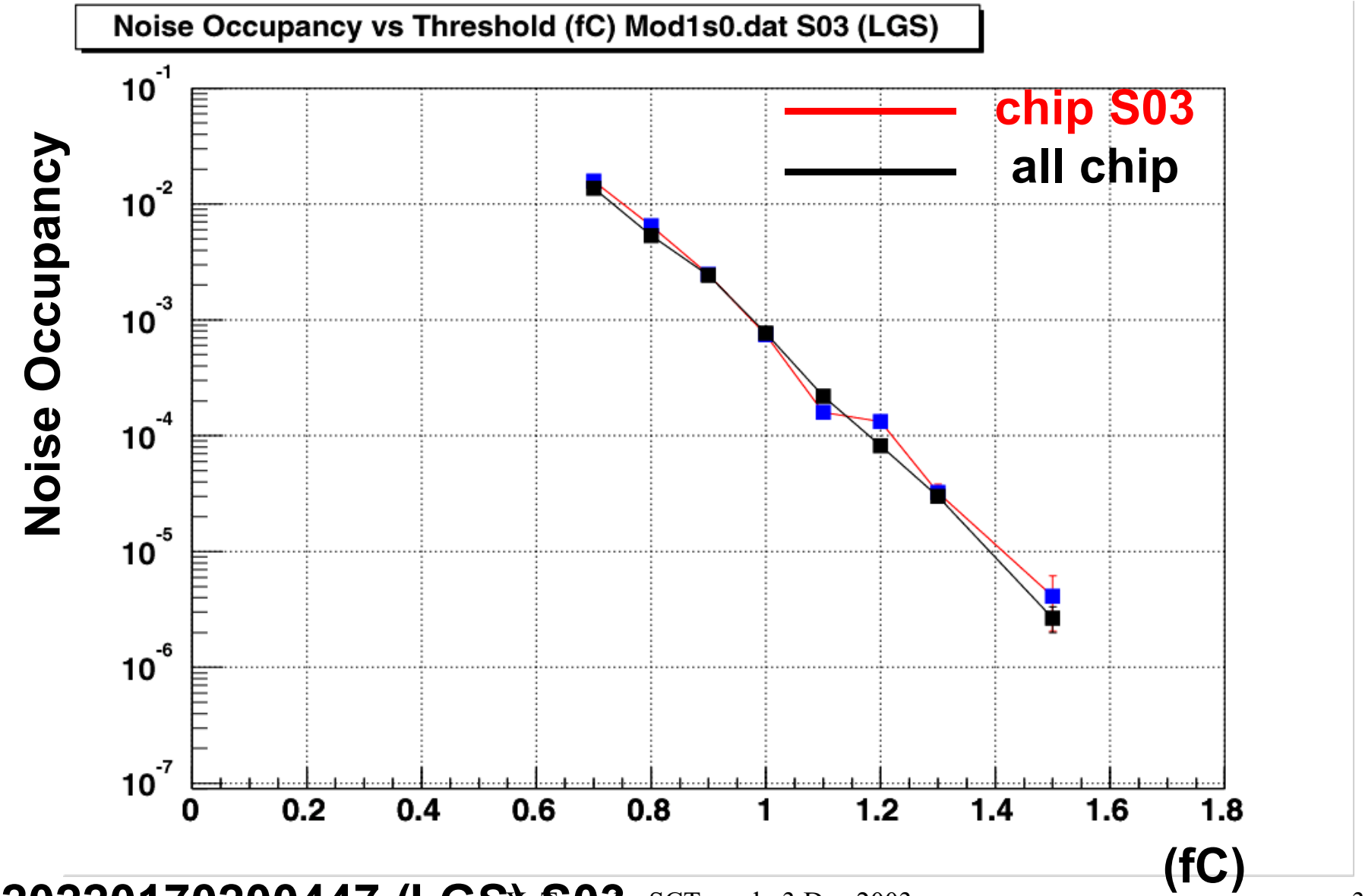
Large Gain Spread

20220170200447

S03 (385-512)
Run number 6443

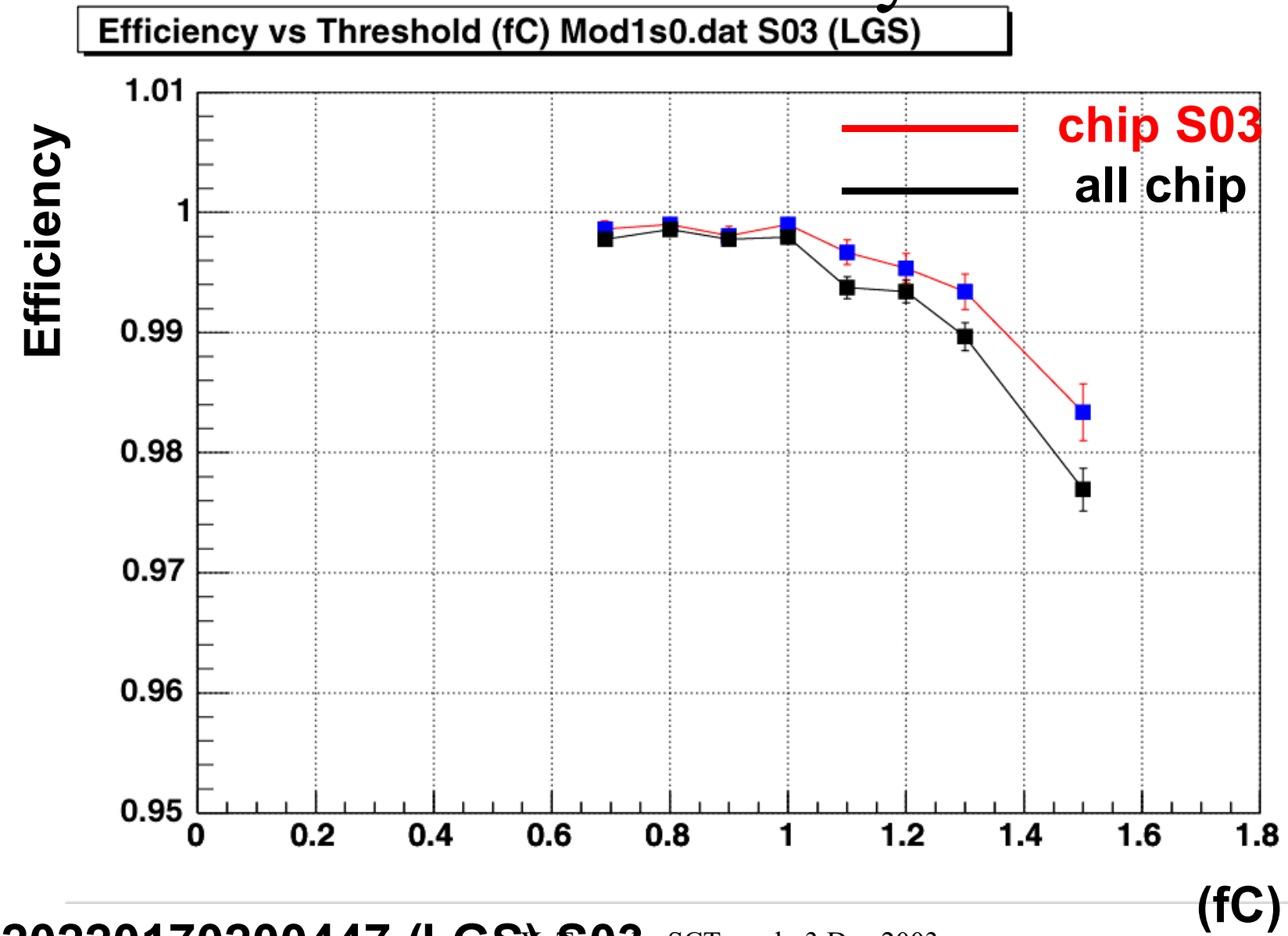
mask file
hotchan
dead 29,130,233,276,283,289,
347,437,553,576,695
noisy
sick

Noise Occupancy



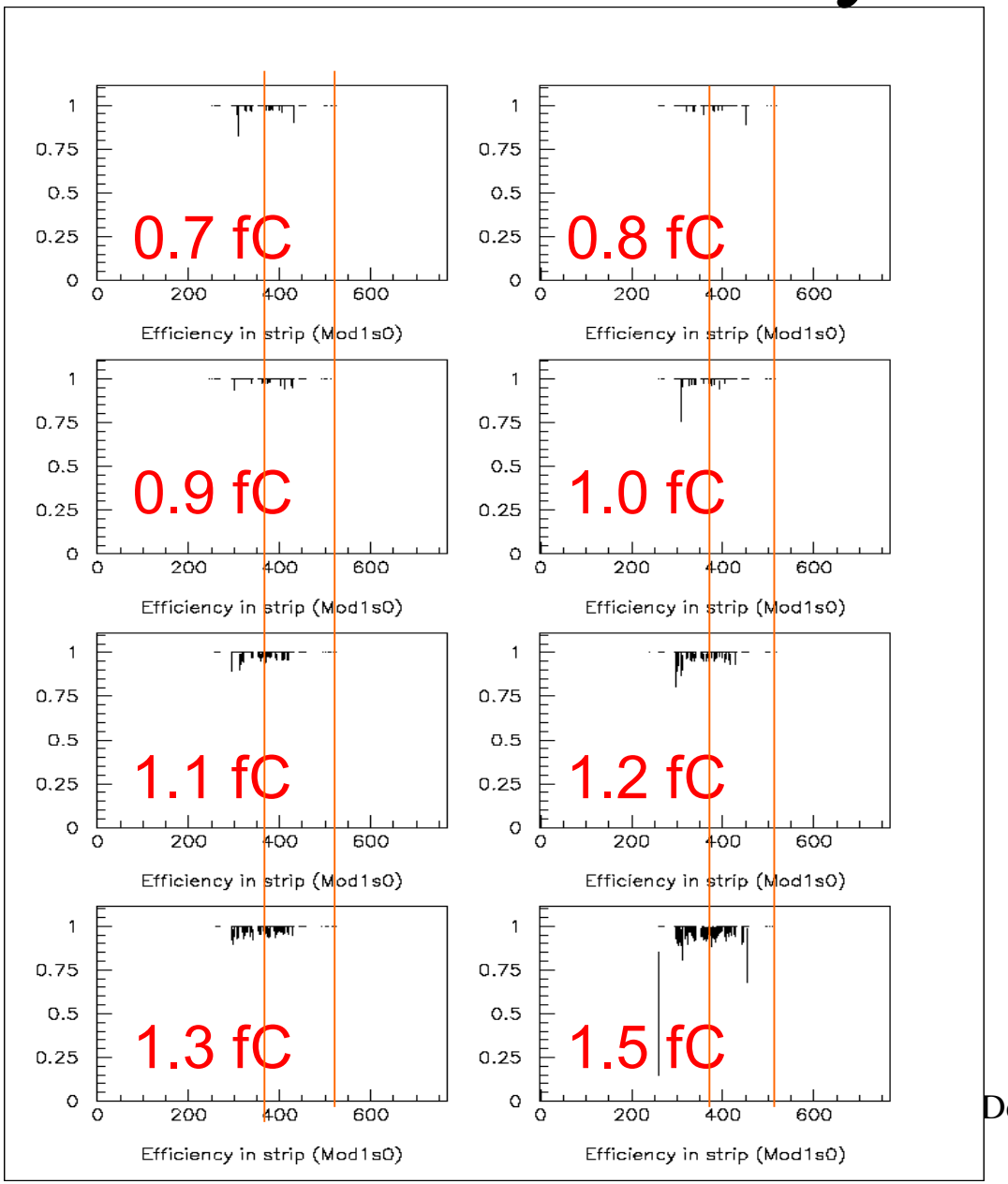
20220170200447 (LGS) S03

Efficiency



20220170200447 (LGS) S03

Efficiency in detail



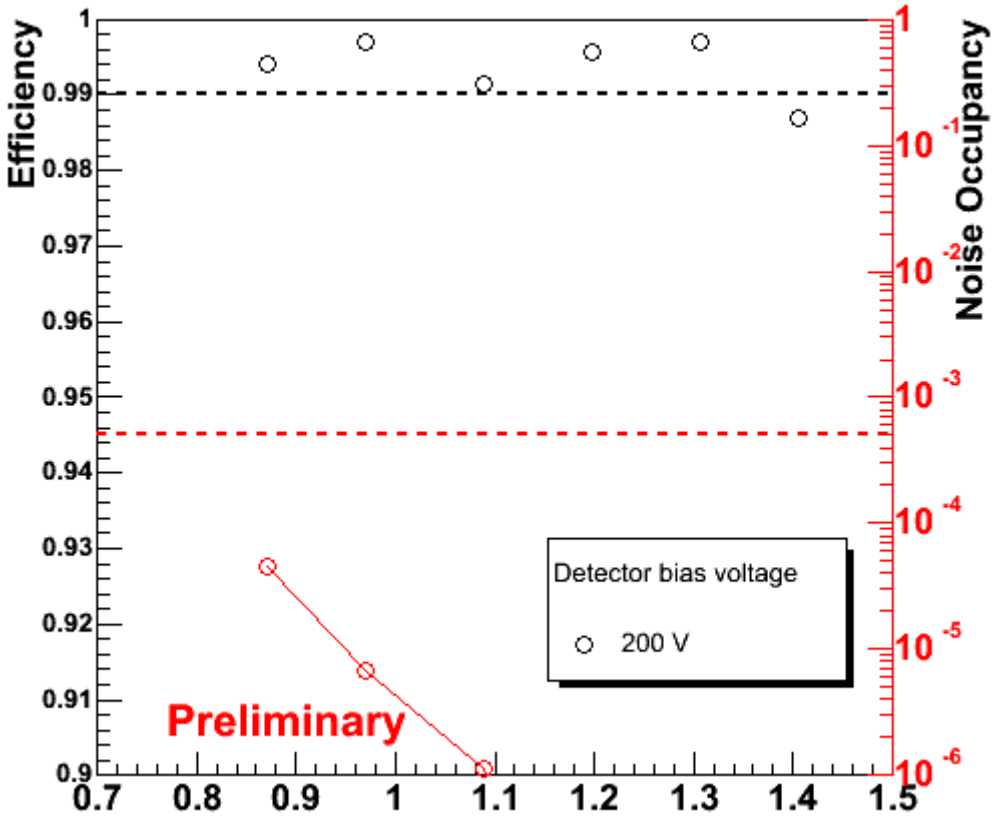
S03 (385-512)

Ish=30 uA ??

Large Gain Spread barrel module 20220040200447*

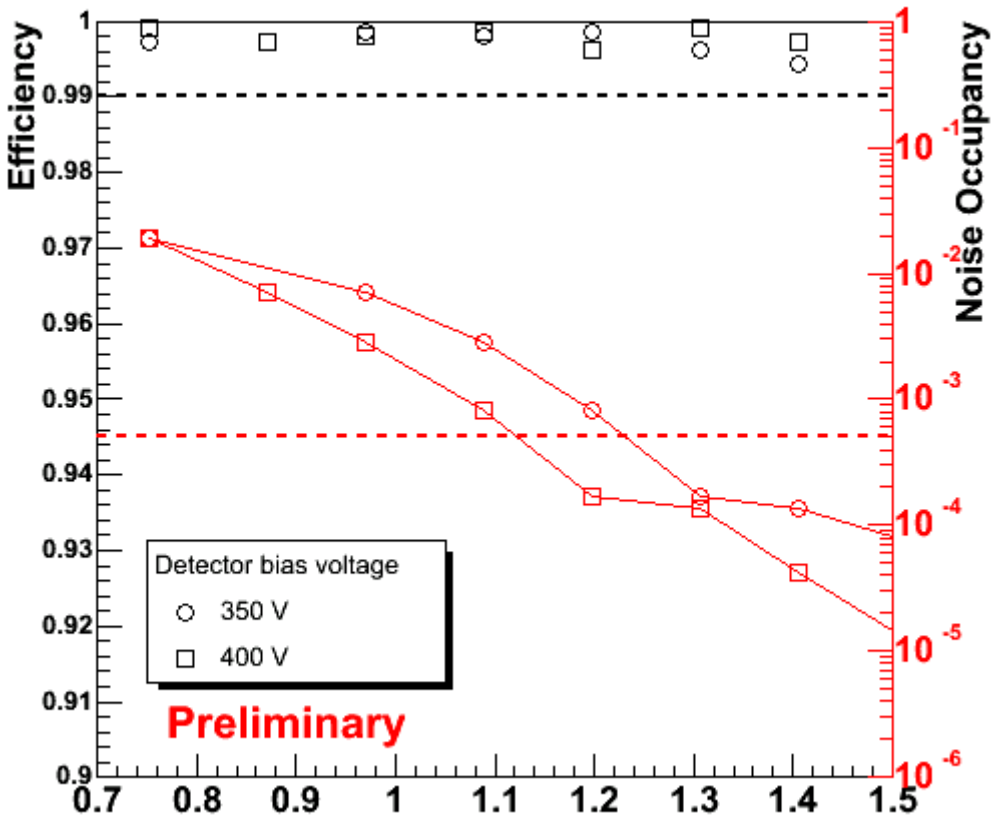
S3 chip

Pre-irradiation (May03)



S3 chip

Post-irradiation (Sep03)



Efficiency and noise occupancy as function of the corrected threshold for chip S3 of barrel module 0047 before and after the irradiation.The dark markers correspond to efficiency measurements, being the red line the noise occupancy.

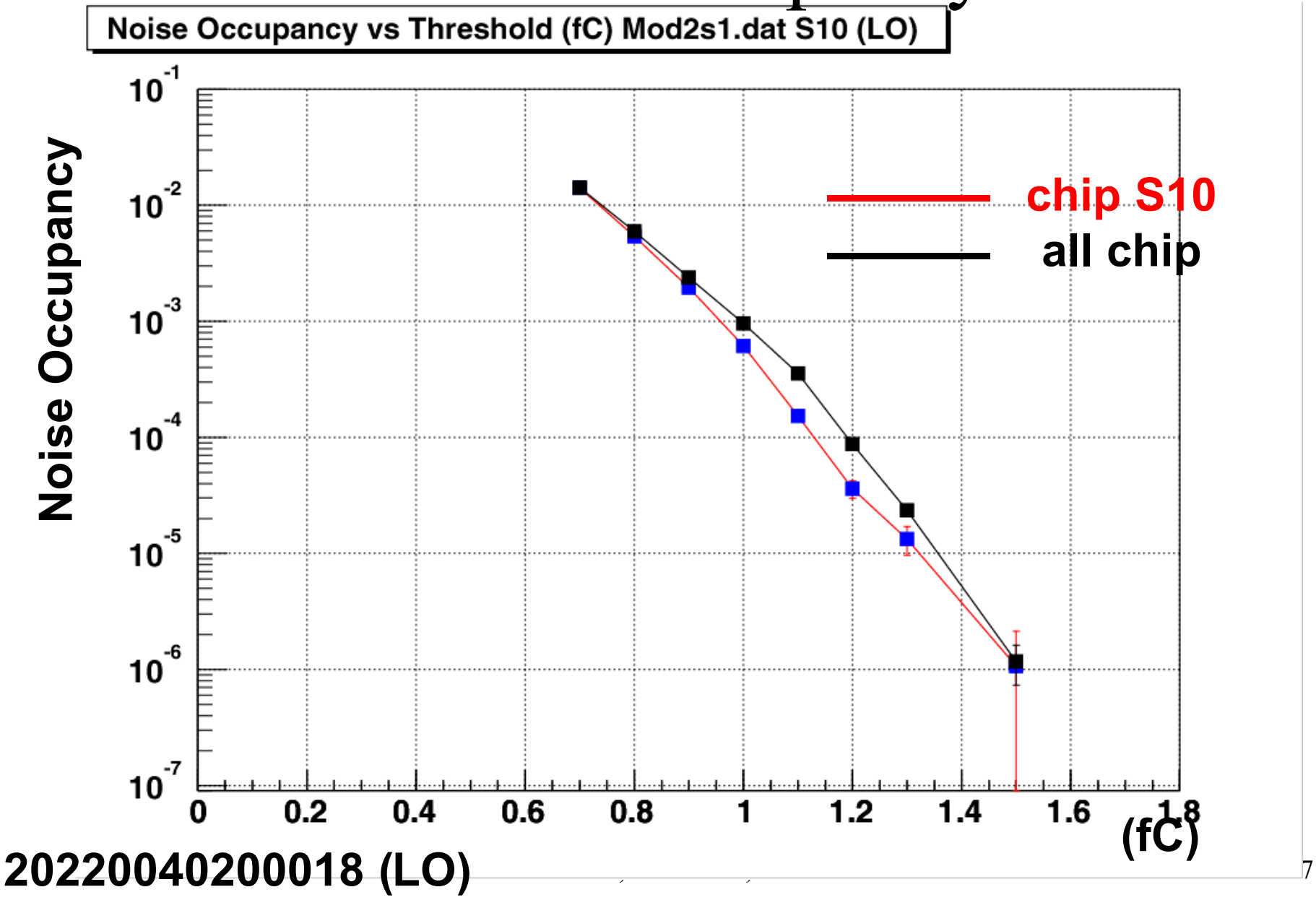
Large Oscillation

20220040200018

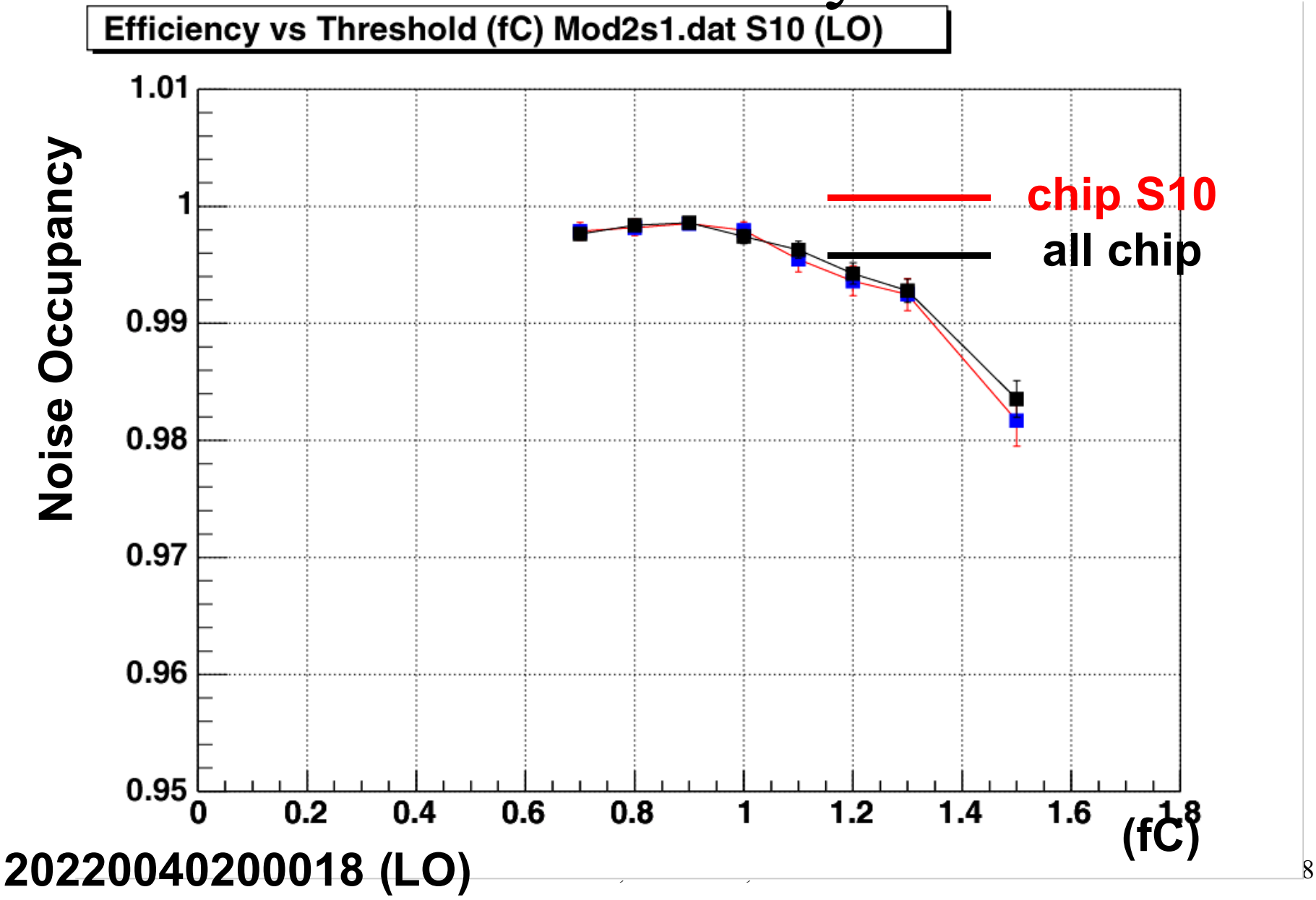
S10 (1025-1152)
Run number 6443

mask file
hotchan
dead 913,927,992,1021,1075,1086,
1164,1228,1238,1248,1252,
1289,1396,1463
noisy
sick

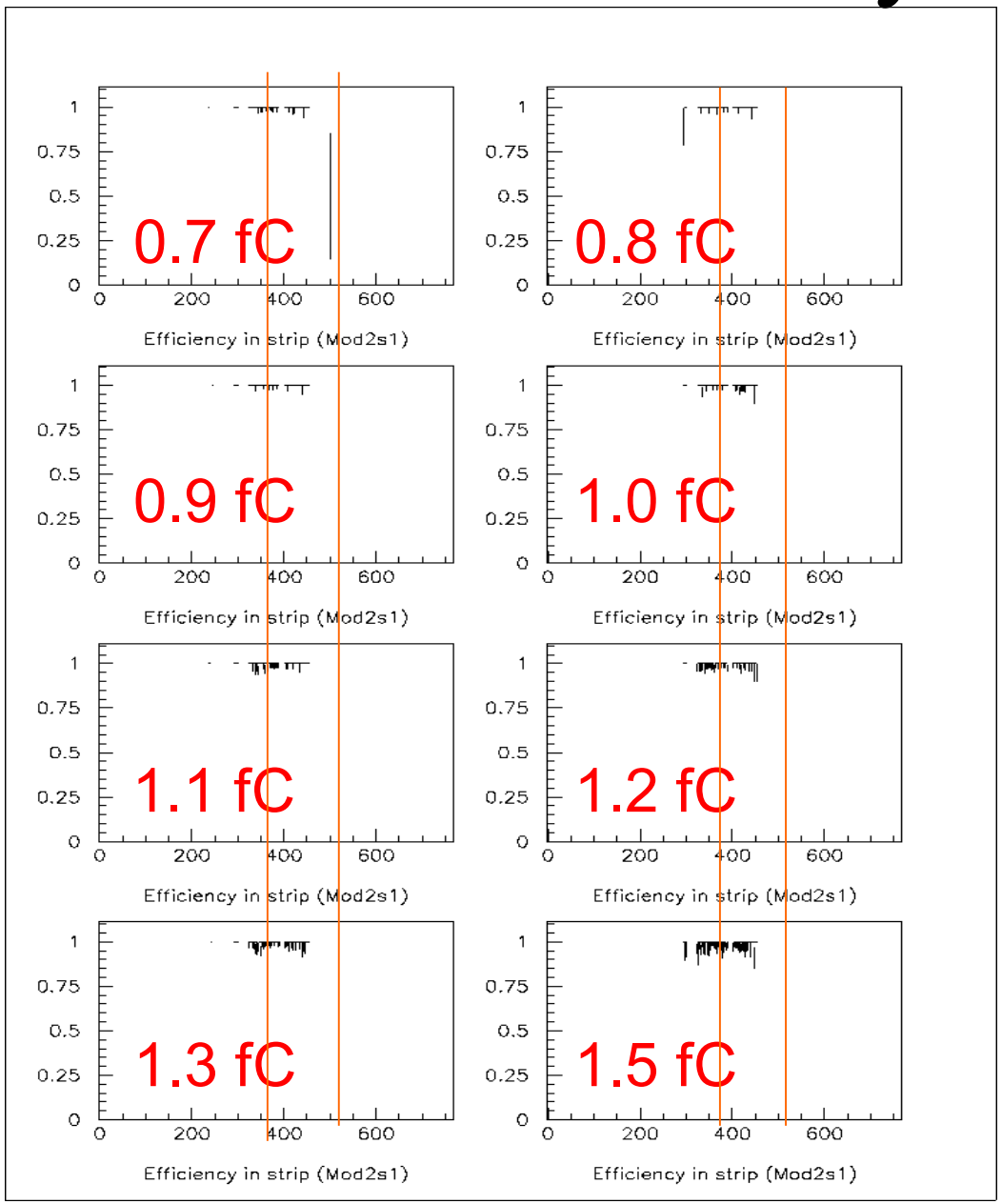
Noise Occupancy



Efficiency

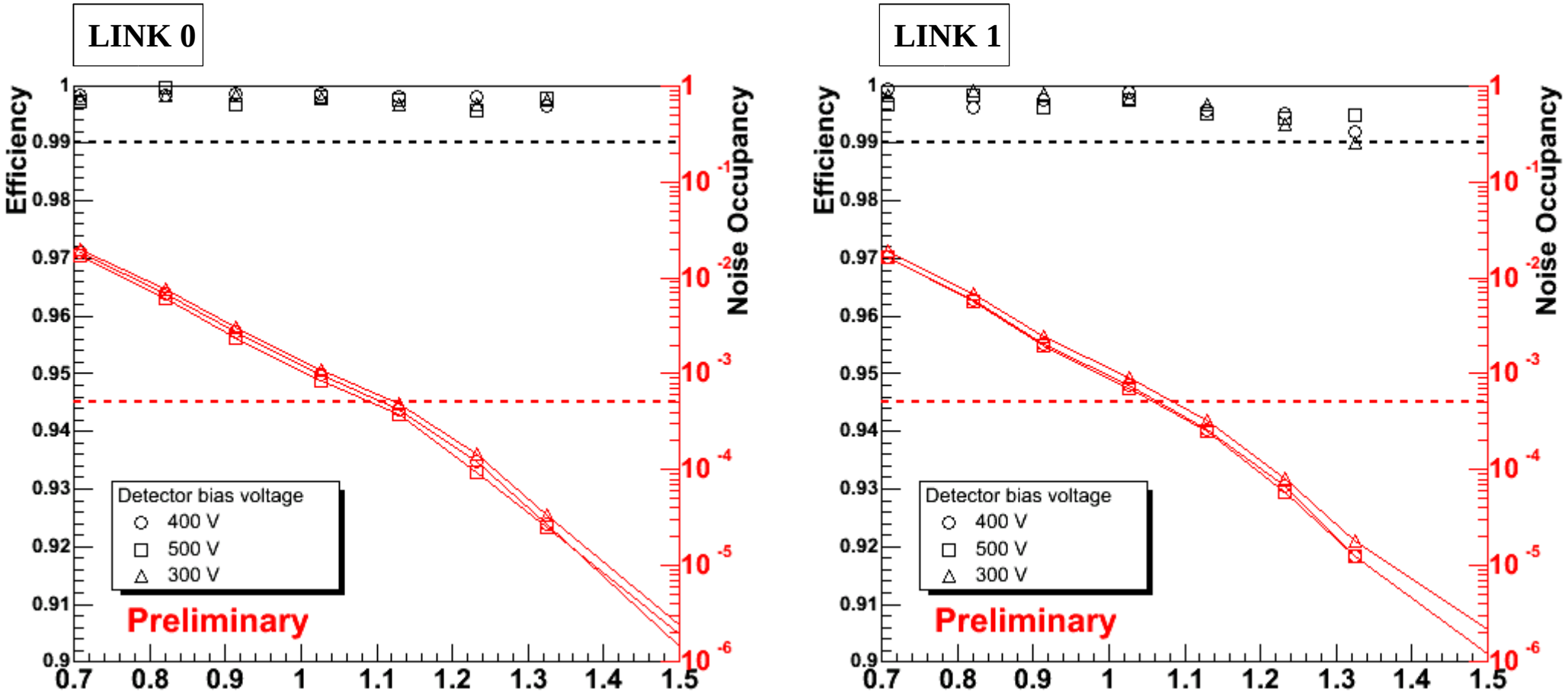

Efficiency vs Threshold (fC) Mod2s1.dat S10 (LO)
Noise Occupancy
1.01
1
0.99
0.98
0.97
0.96
0.95
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
(fC)
chip S10
all chip
20220040200018 (LO)

Efficiency in detail



S10 (1025-1152)

Large Oscillation barrel module 20220040200018*

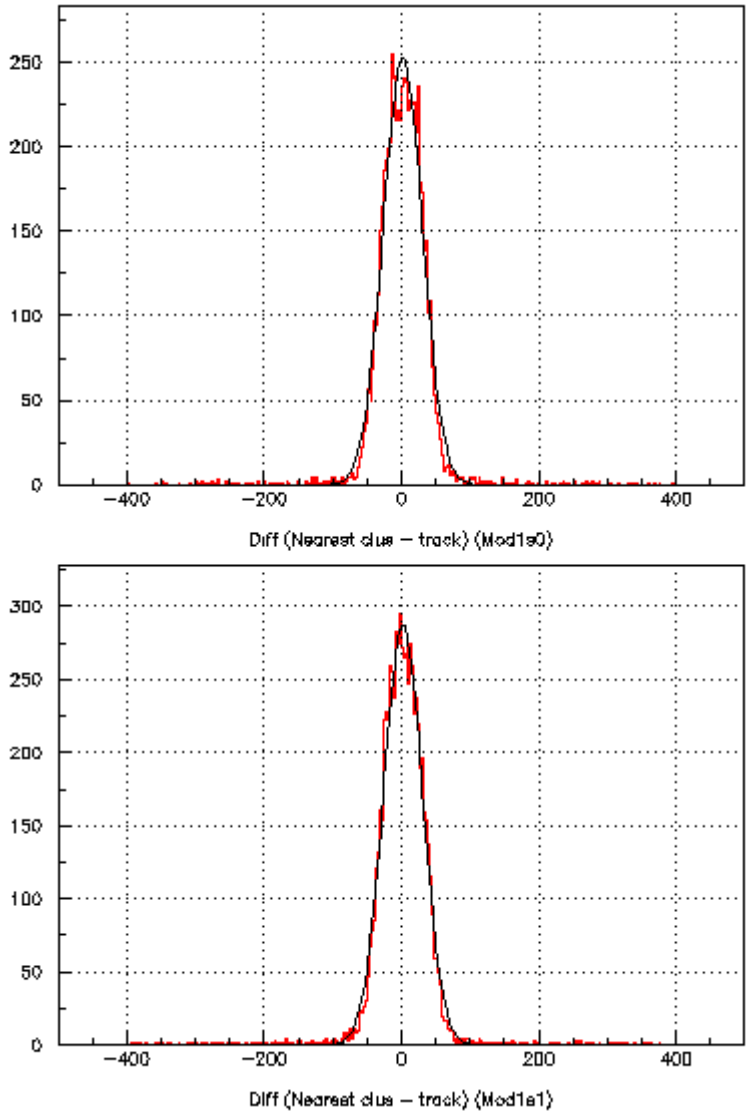


Efficiency and noise occupancy as function of the corrected threshold for module 0018* link 0 (left) and link 1 (right) for different detector bias voltages. The dark markers correspond to efficiency measurements, being the red line the noise occupancy.

Position resolutions

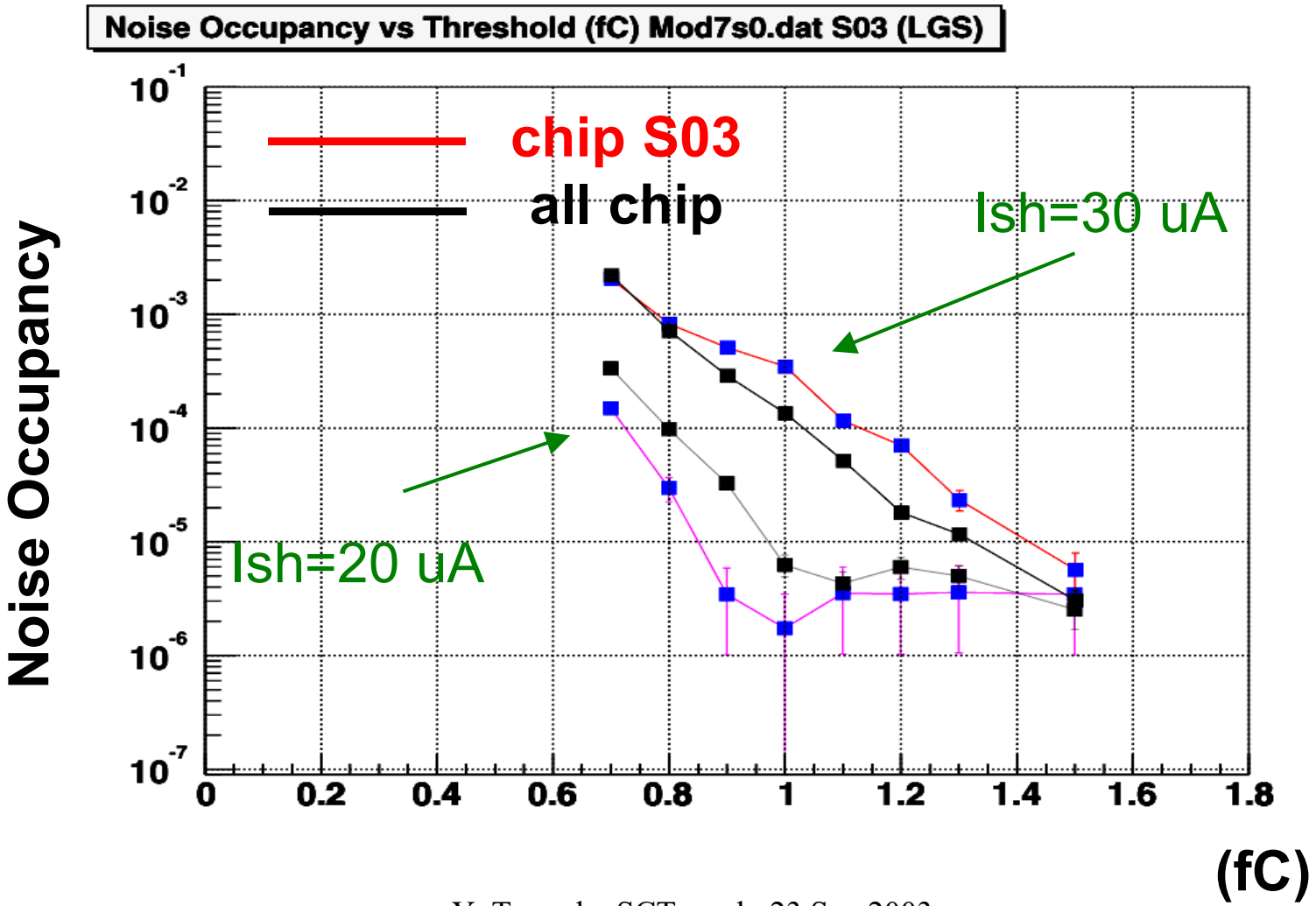
	link0	link1
20220170200010	27.3	27.3
20220170200447	26.6	26.7
20220040200018	26.8	26.5
20220380200006	26.3	27.6

(μm)



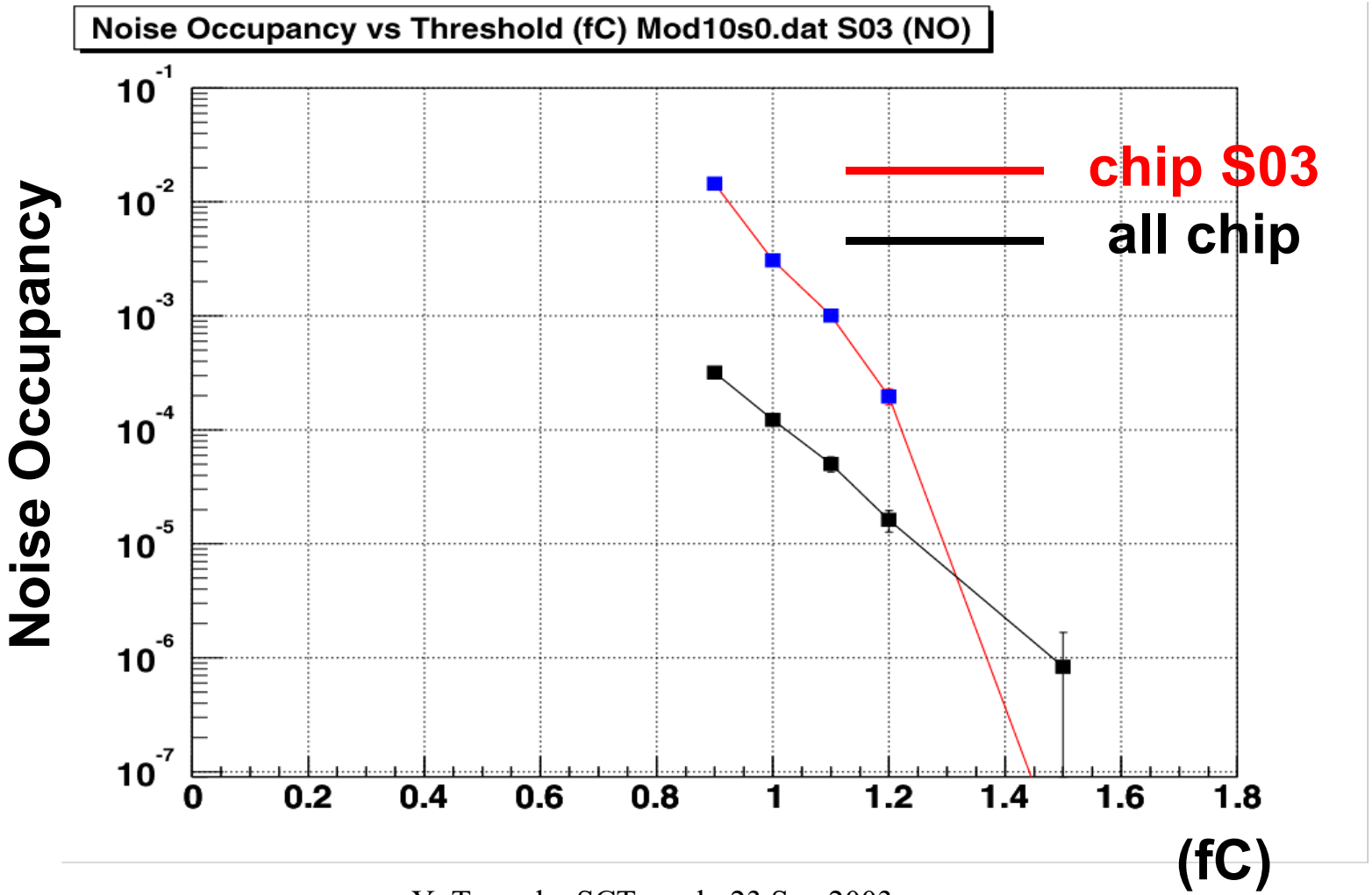
Noise Occupancy

20220170200447 (LGS) S03 (pre-irradiation)



Noise Occupancy

20220170200010 (NO) S03 (pre-irradiation)



Conclusions

- After irradiation (~60% of 3x10^14 p/cm^2)
- LGS chip or Wiggly link 1 perform as same as the other chips/links
- Pre-irradiation
  - LGS: ISH = 20 uA required to have NO<5x10^-4 at 1fC
  - Wiggly link1: no difference
  - Negative offset: 5x10^-4 at 1.2 fC