

IFR during Trickle Injection

Ops. Meeting 19 June 2003

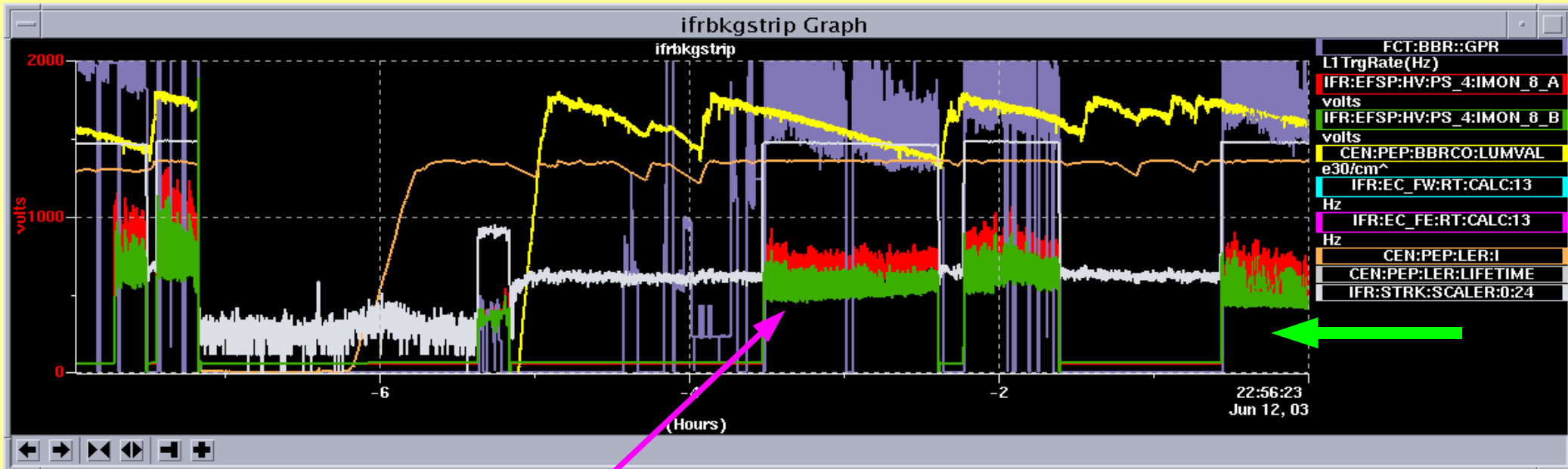
Mirco Andreotti & Gianluca Cavoto on behalf of IFR crew

- Trickle Injections online control
 - Monitoring of currents in the external layer.
 - Comparison with beam dead time.

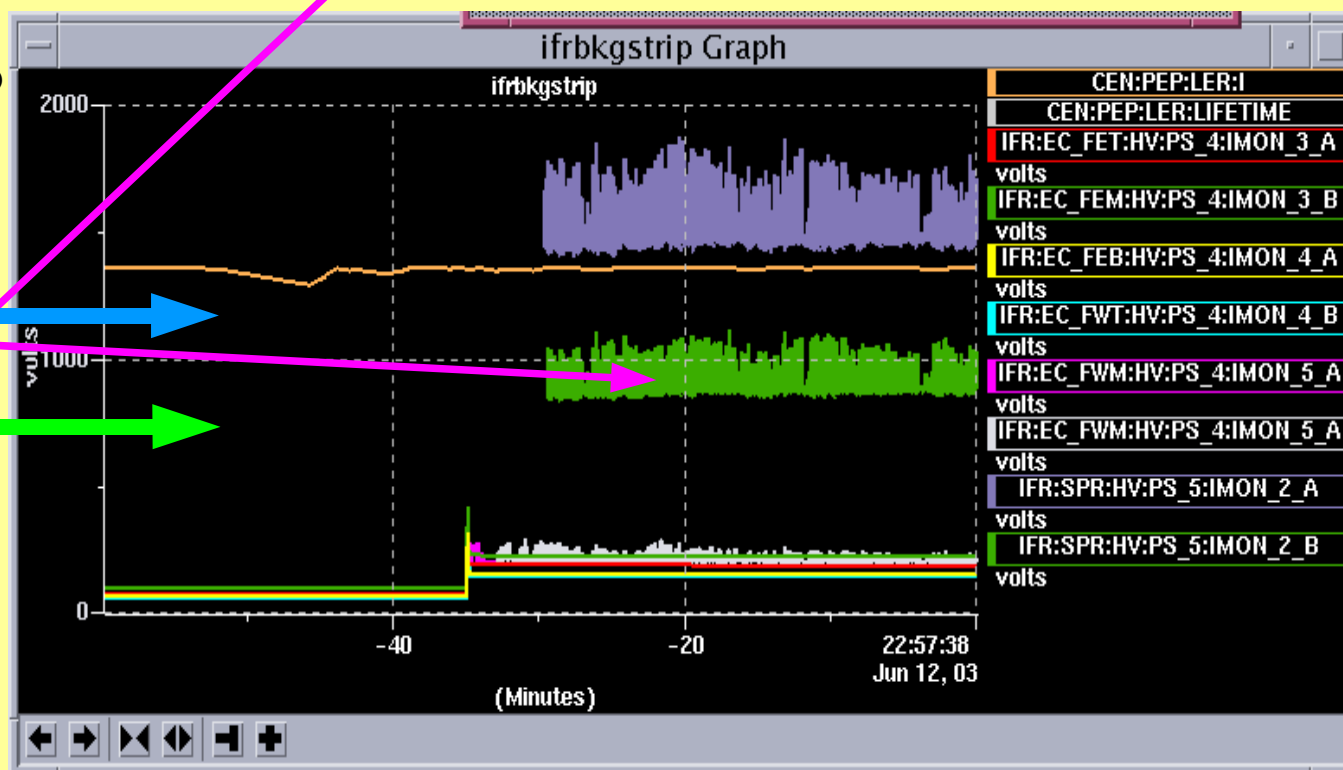
- Offline checks
 - Data samples for trickle and normal.
 - Dark currents comparison between trickle injection and normal coasting.
 - OPR QA plots.

12 June

Layer 14



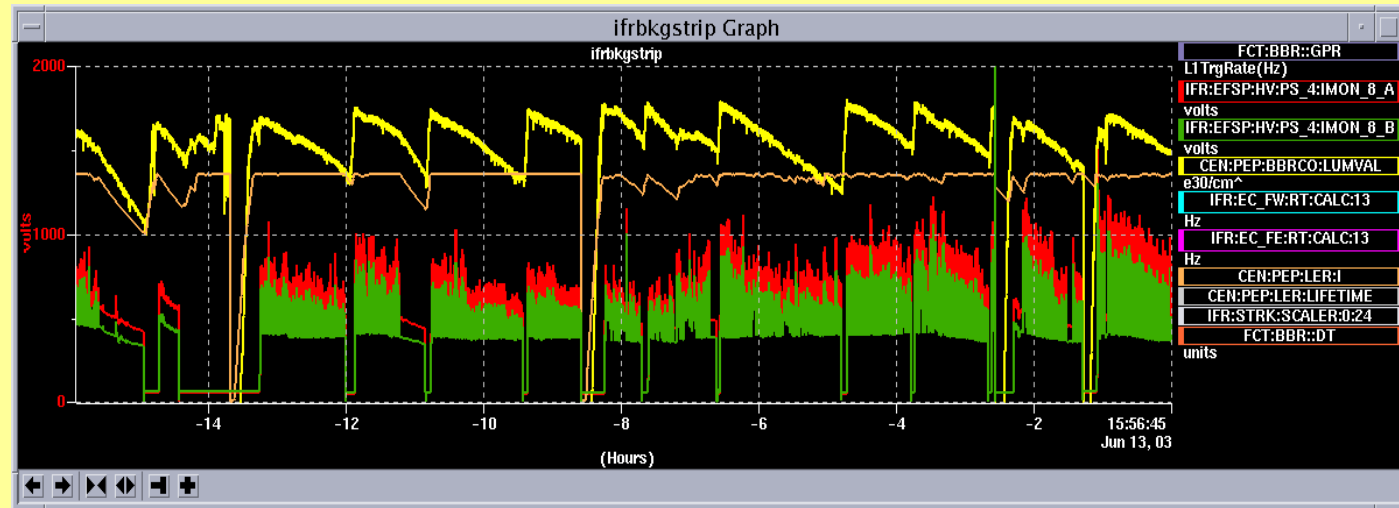
Layer 15



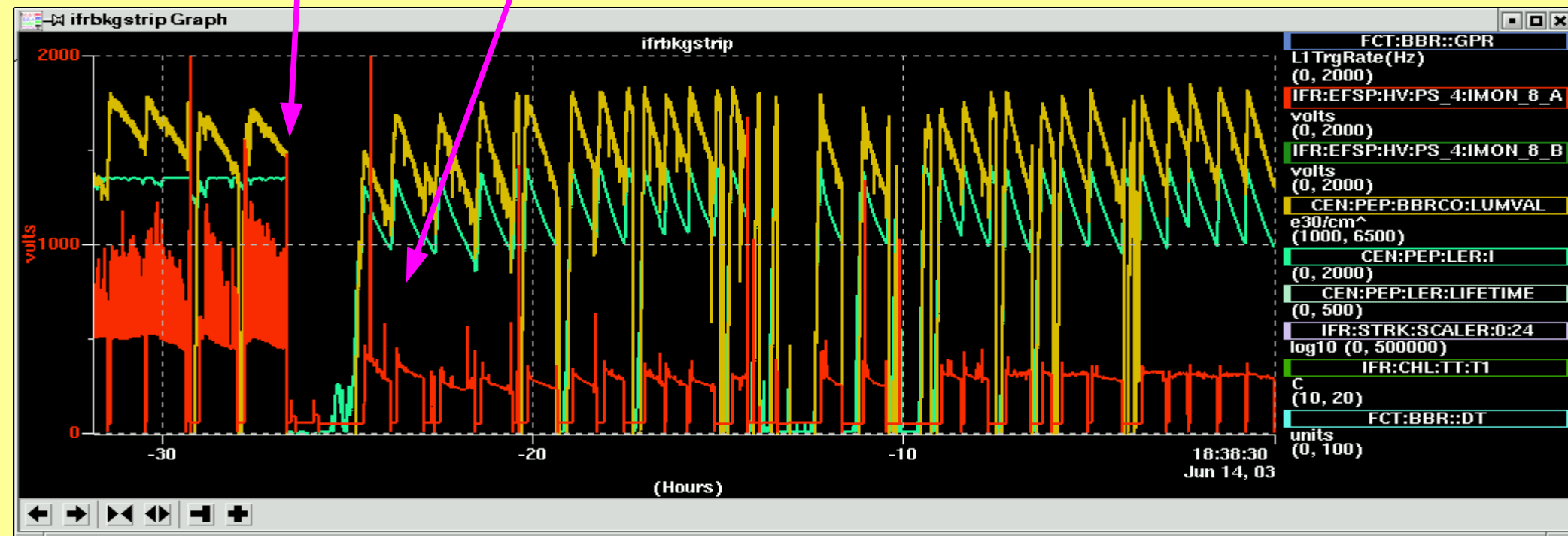
Evident oscillatory behavior of the currents.

Online monitoring 13 June

Again oscillatory behavior of the currents.

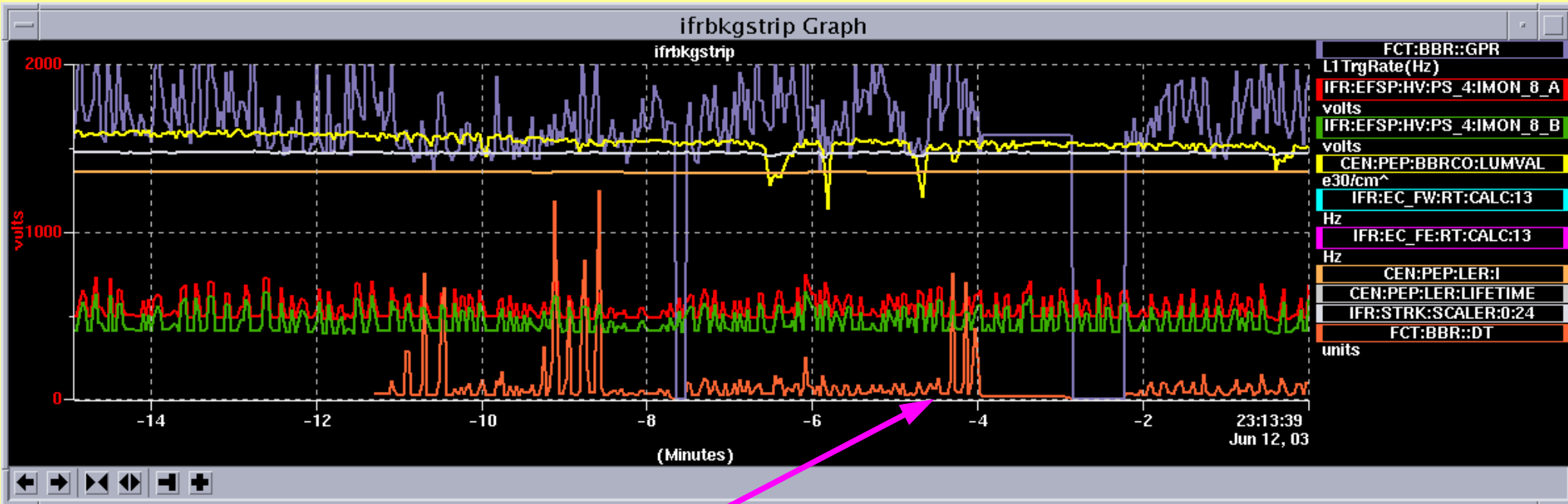


Trickle end vs normal coasting 14 June

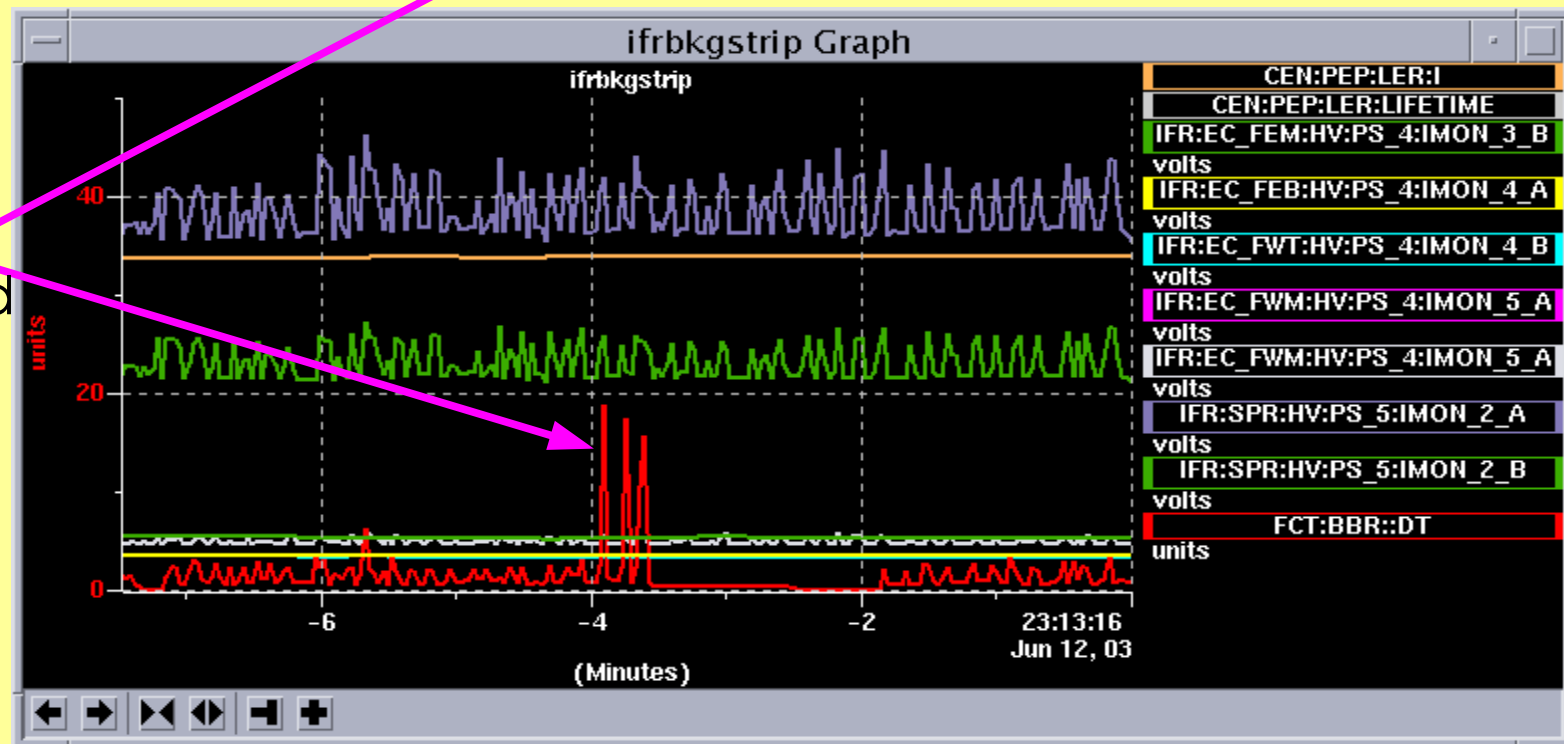


Layer 14

Online currents vs dead time



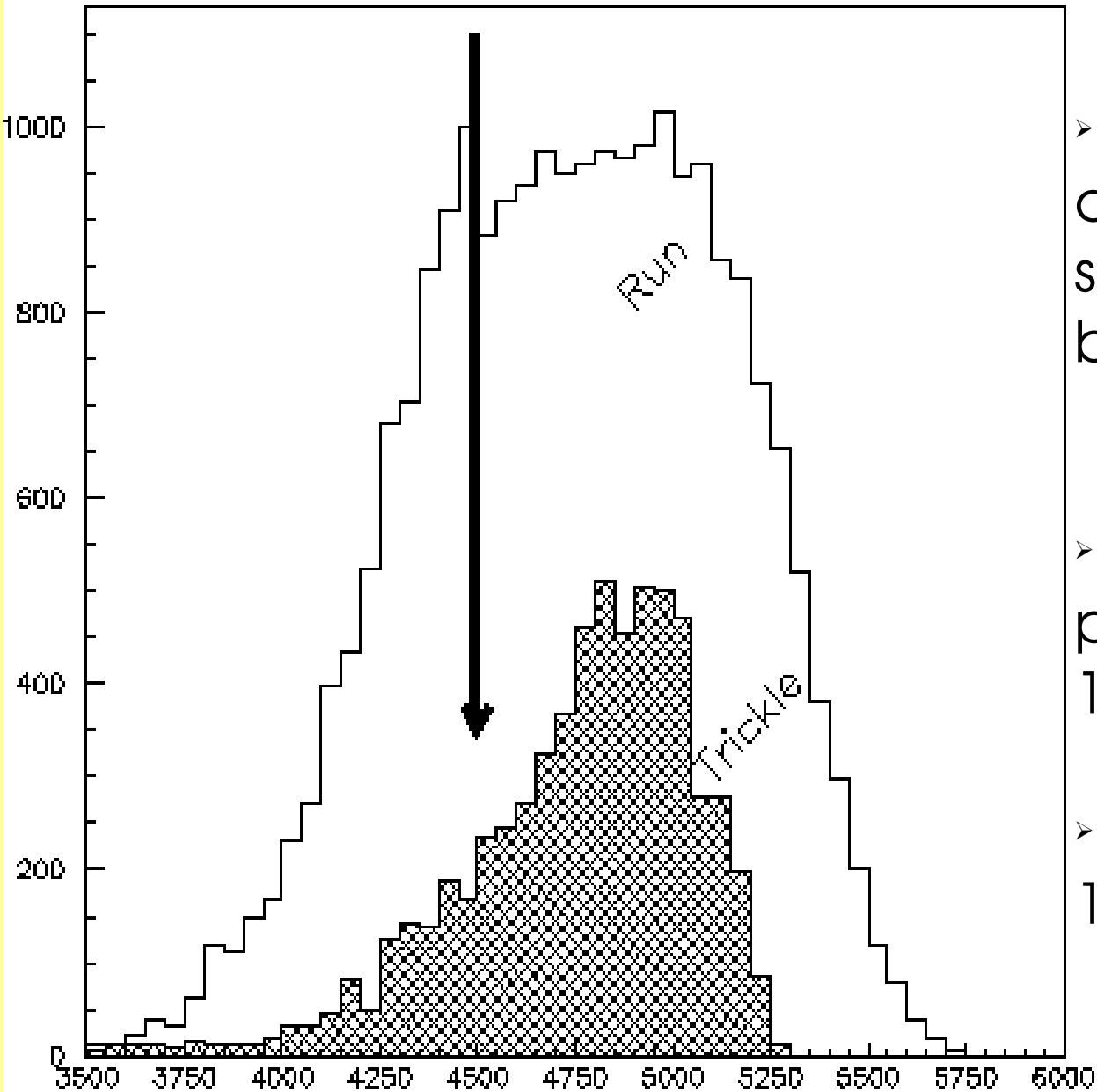
Layer 15



Oscillatory LER dead time behavior correspond to a same behavior of currents in external layers.

Data samples

Lumi Run/Trickle



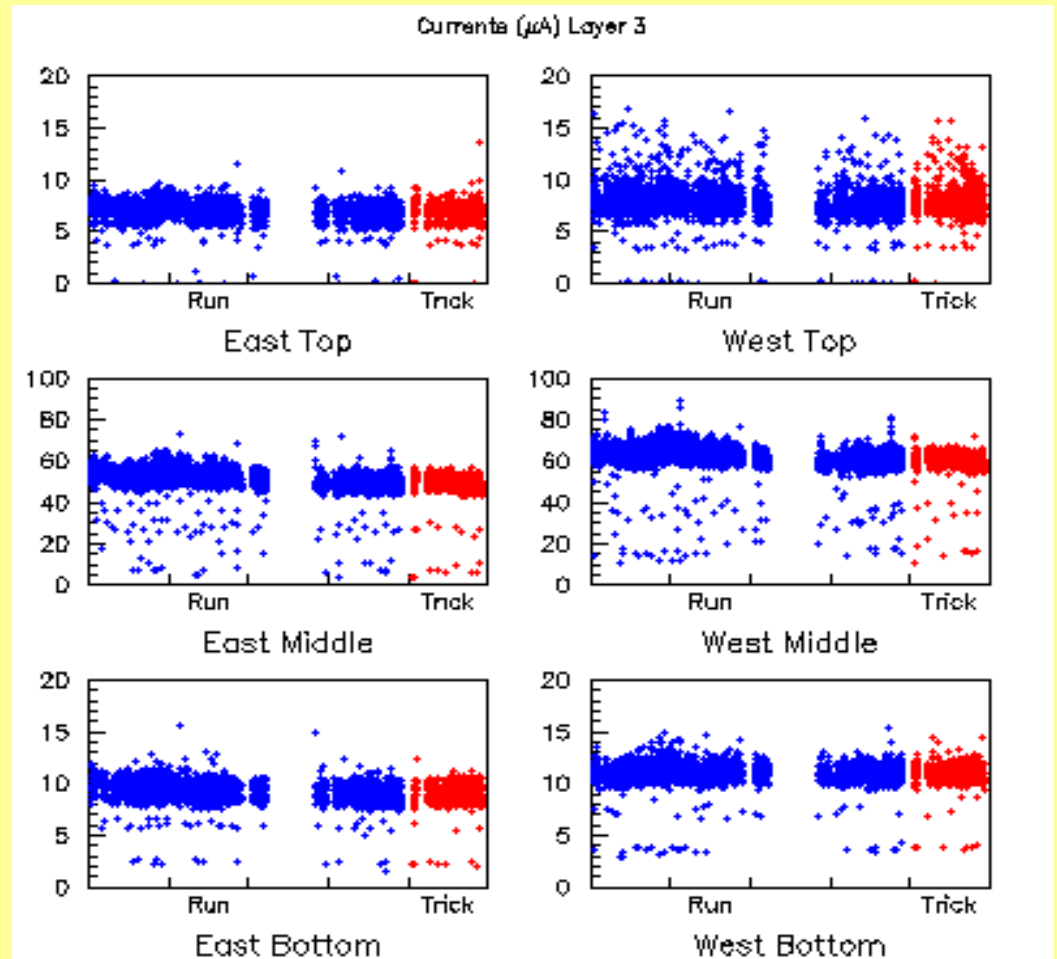
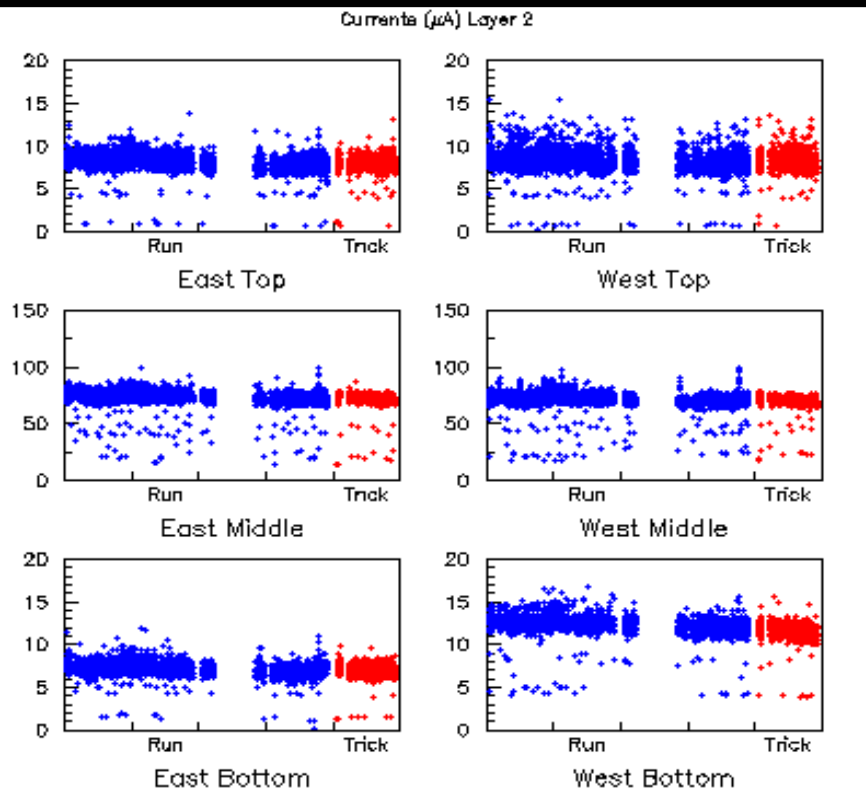
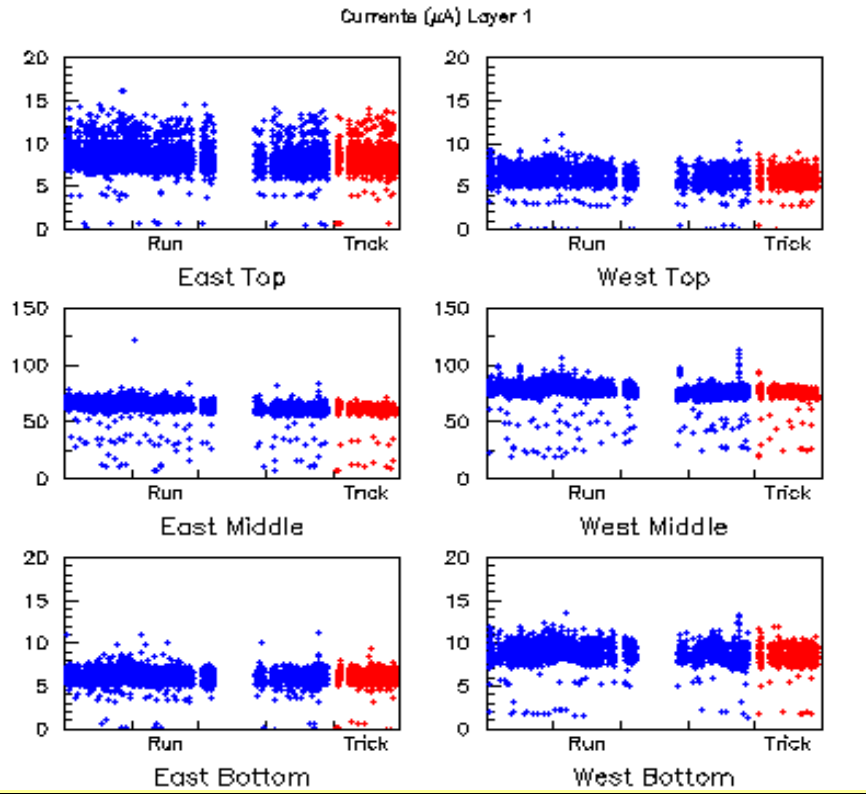
➤ From normal coasting and trickle injection two samples of data have been selected with $\text{lumi} > 4.5$

➤ Normal coasting from period:
16:00 7 Jun -> 10:00 12 Jun

➤ Trickle from period :
14:00 12 Jun -> 16:00 13 Jun

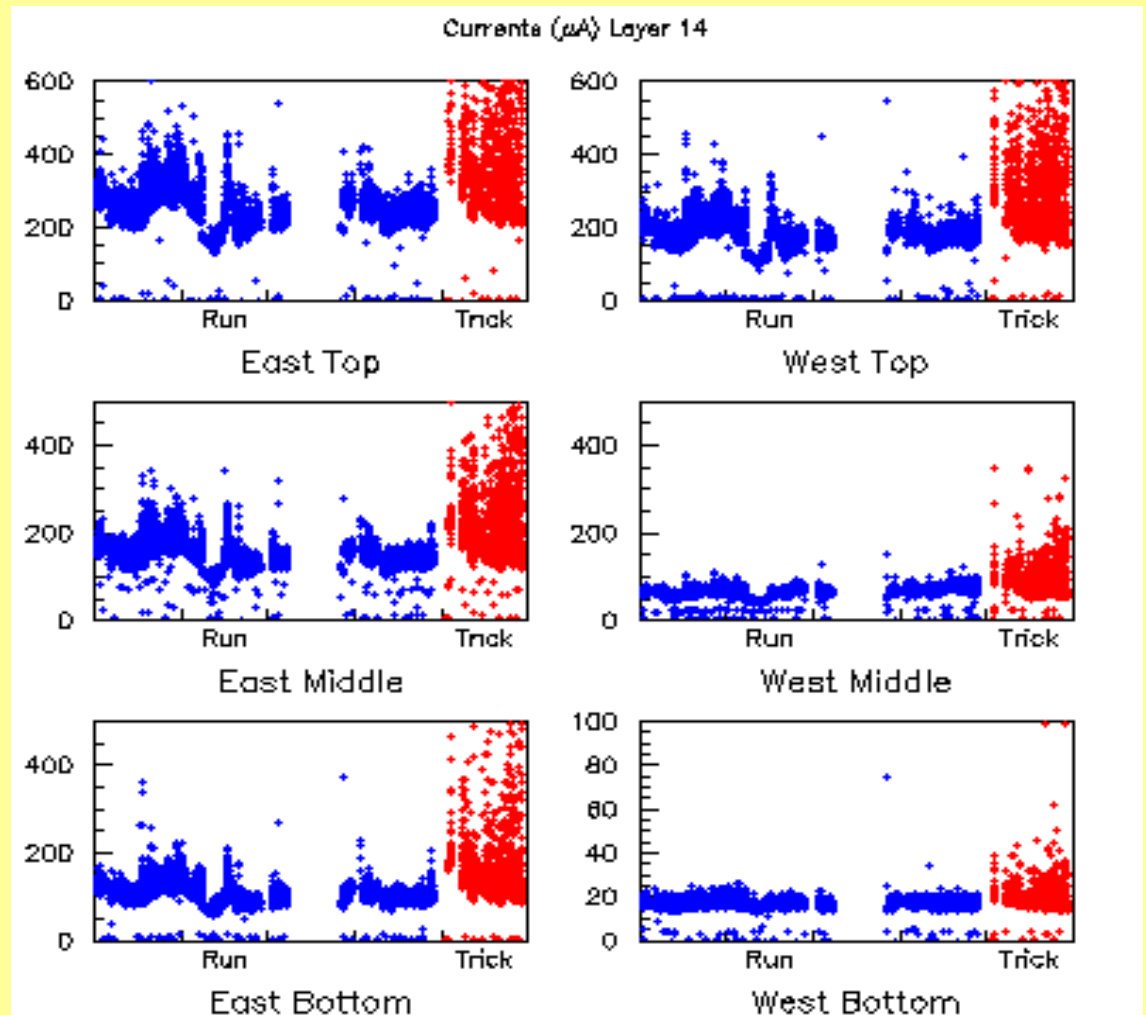
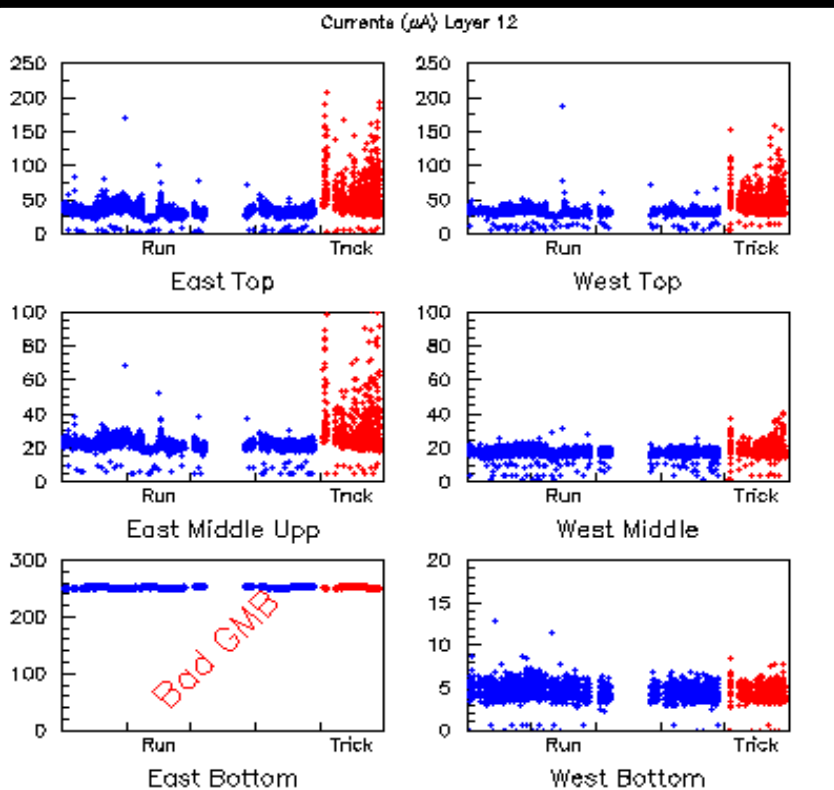
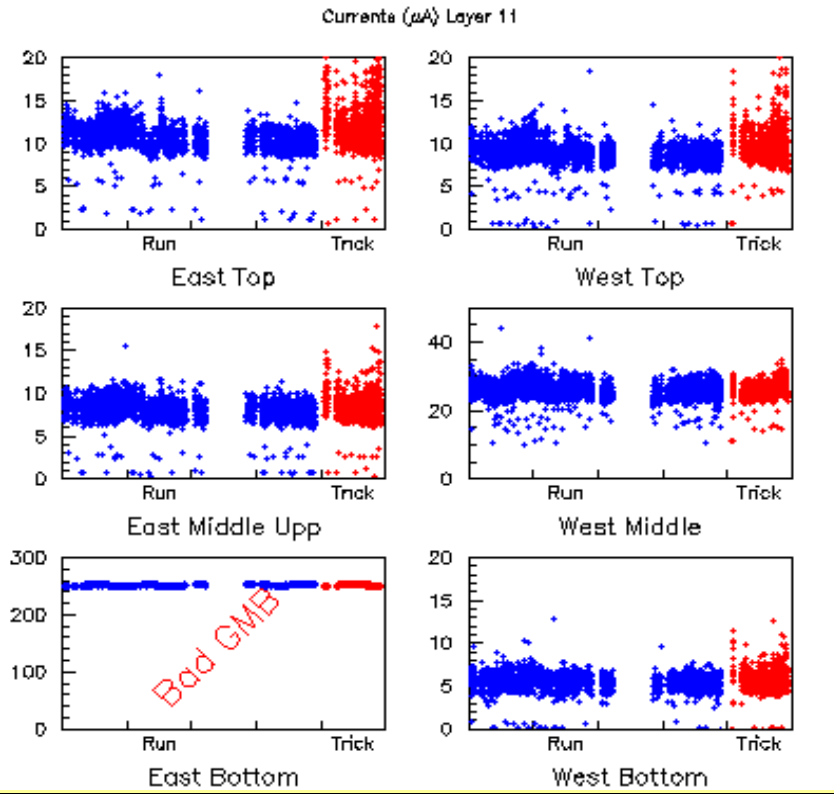
Currents in Fwd Layer 1,2,3

Trickle Injection
Normal Coasting

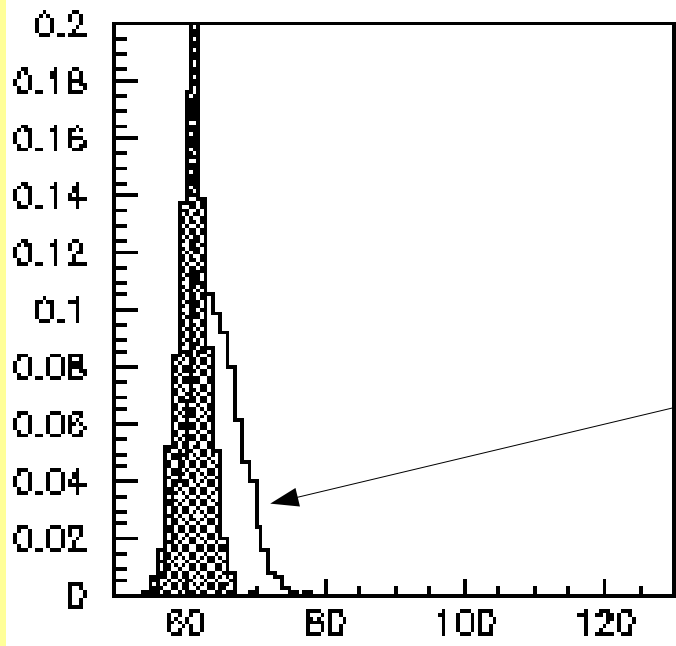


Currents in Fwd Layer 11,12,14

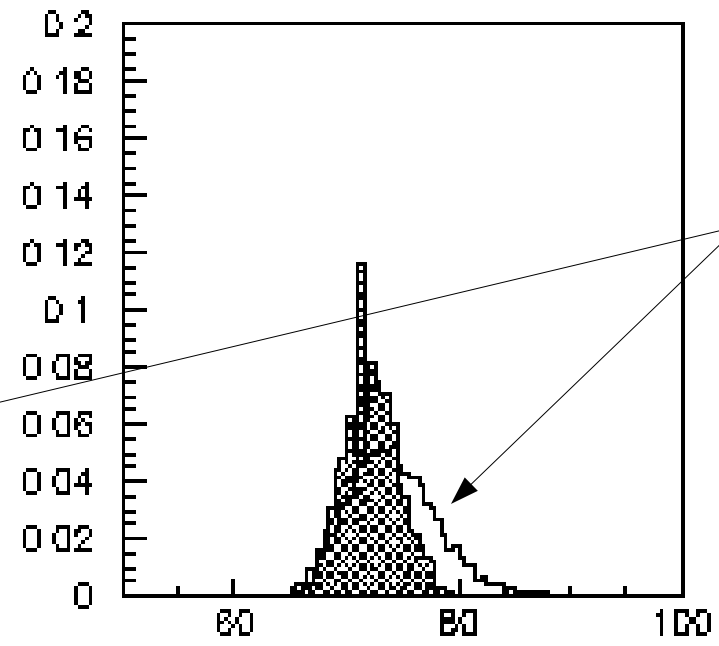
Trickle Injection
Normal Coasting



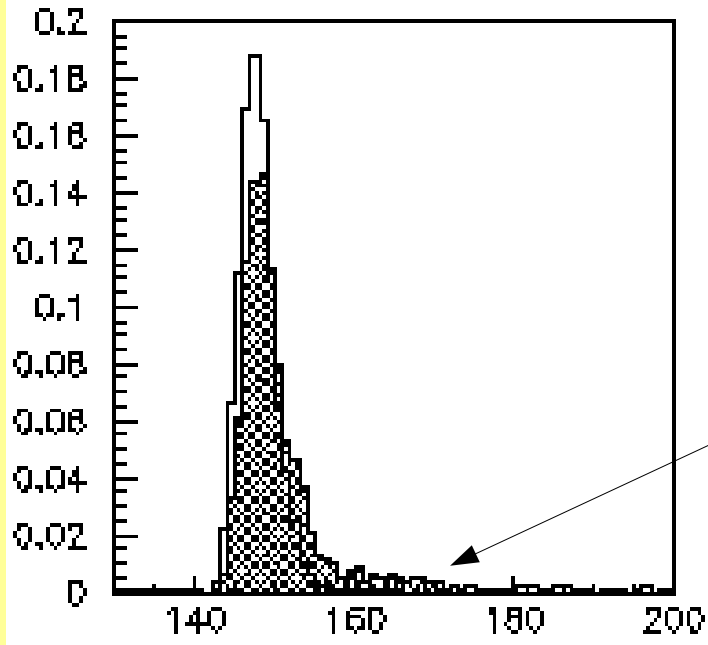
Currente distributions (μA) Middle east



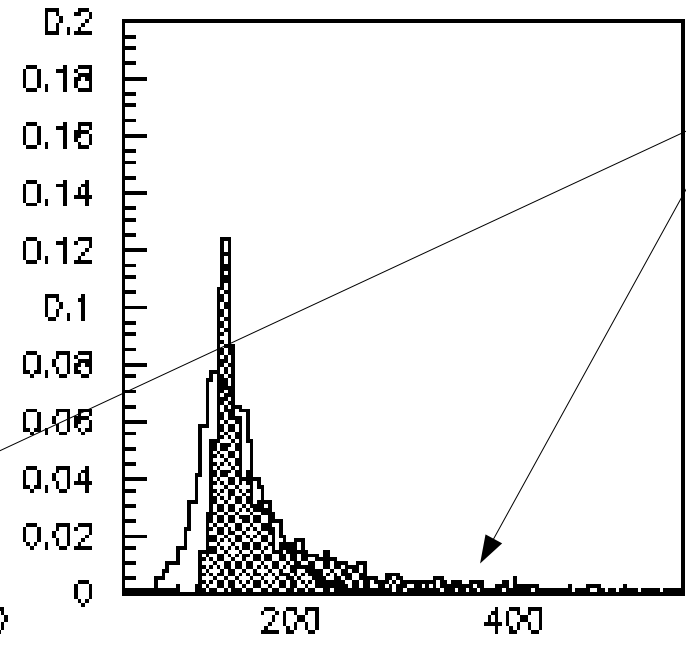
Layer 1



Layer 2



Layer 12 MU



Layer 14

Trickle
Normal Coasting

Spread in normal coasting due to variations in lumi.
> No effects from trickle in inner layer.

Tail in outer layer due to trickle injection.

Conclusions

- HV no trips.
- LV no problems.
- Background:
 - About double background in external layer (14,15 reaches 500 MHz) looking at the currents.
 - More background also in layers 11,12.
 - No effects on inner layers.
- Trickle run quality:
 - OPR QA plots during trickle injection are comparable with those during normal coasting.
 - Plots concerning π/μ likelihood ratio, mean number of layers or mean last layer don't show special differences from standard runs

BUT

 - concerning μ ID efficiencies we need more offline studies.