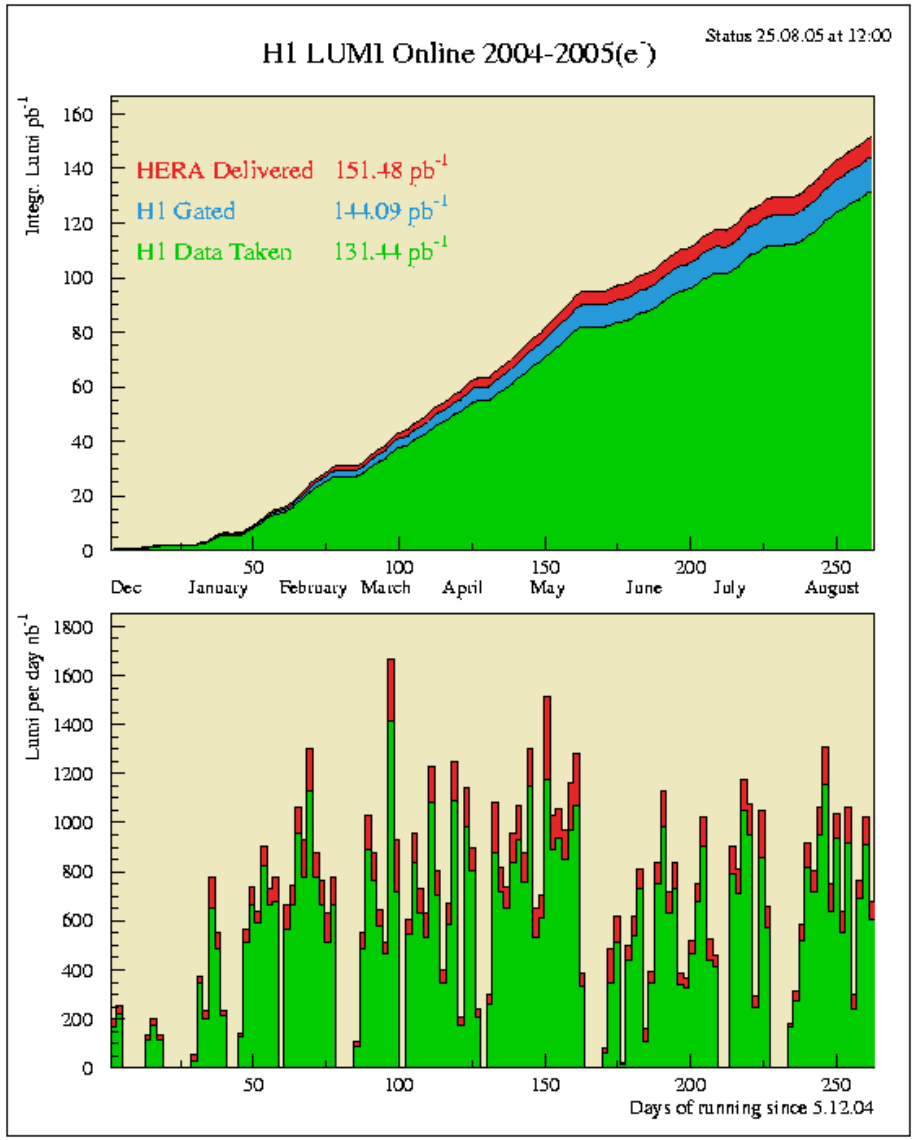
Armen Bunyatyan

HERA coordination meeting, 30.8.2005

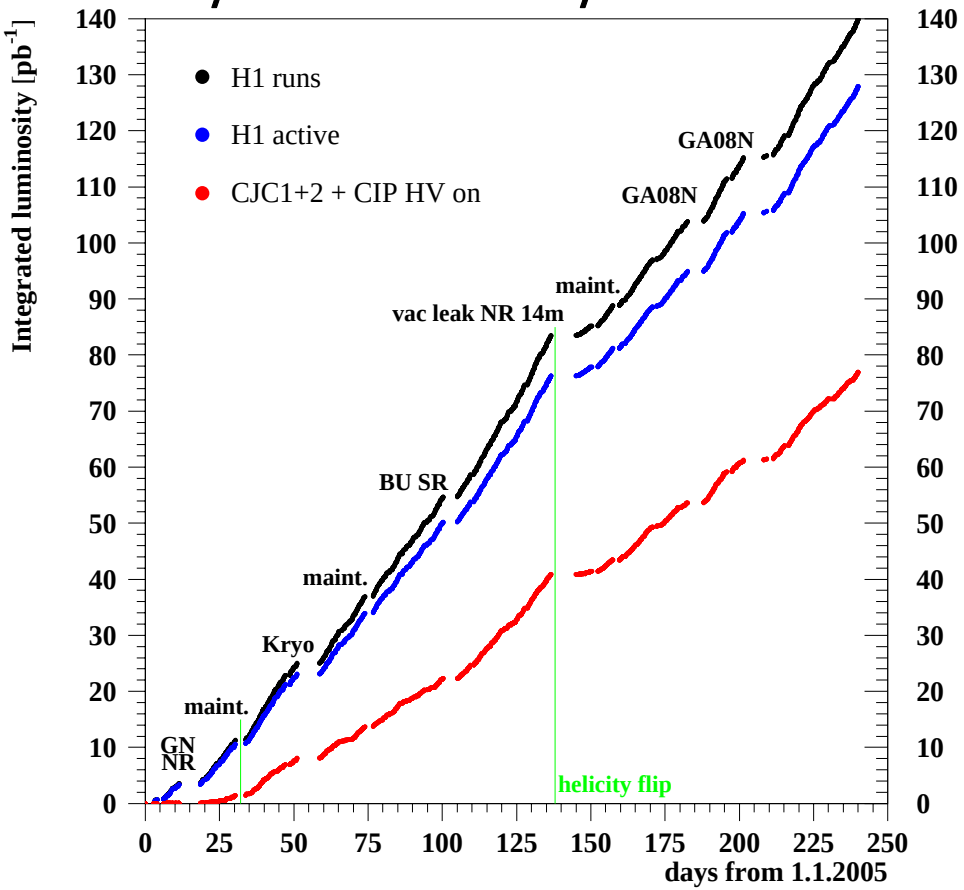
Status of H1

- Luminosity running
- FST/BST repair
- Summary

H1 Luminosity

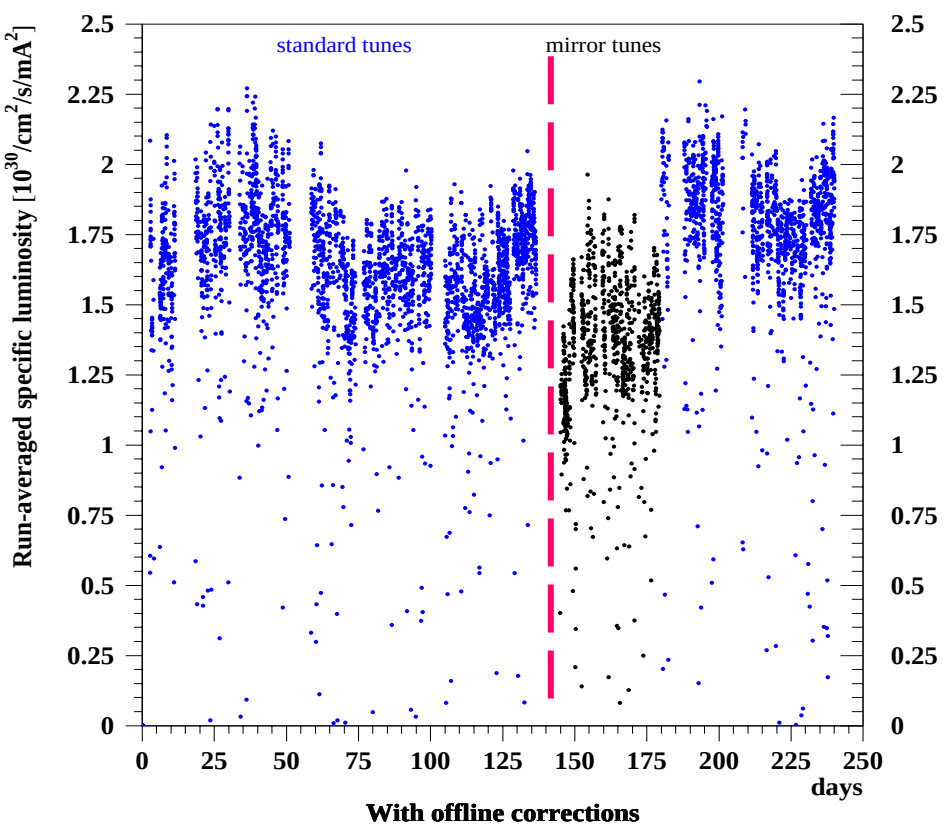


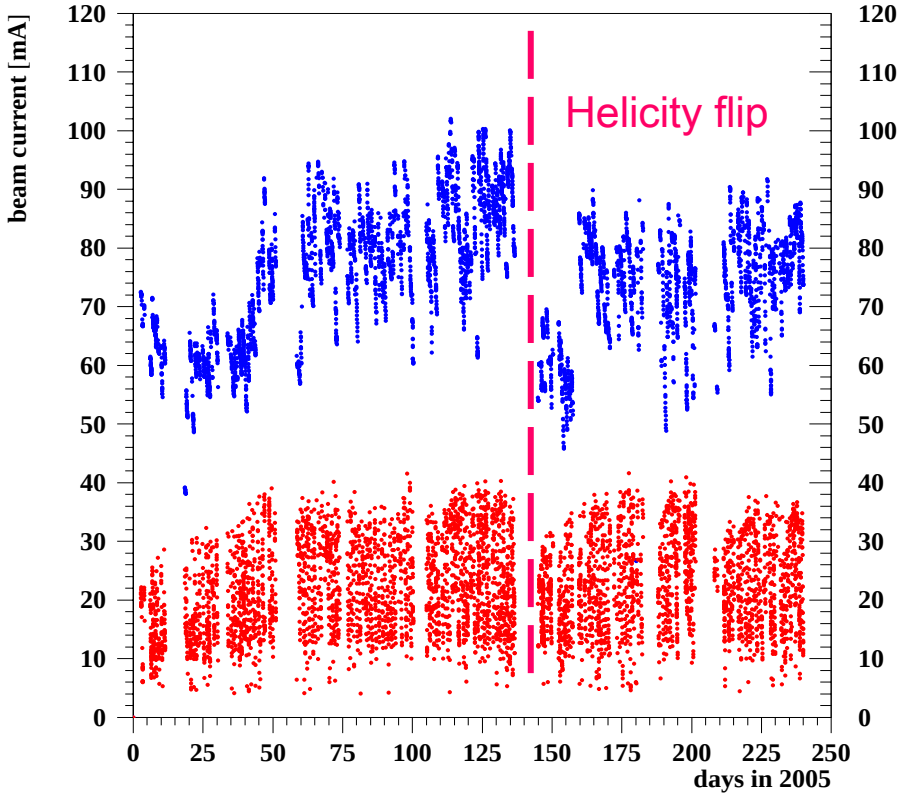
Continuous and stable data taking, except of few interruptions



- *H1 HV on: 76 pb-1* (average efficiency 59%)
- HERA-2 e+p ~50 pb-1
- HERA-1 e-p ~15 pb-1

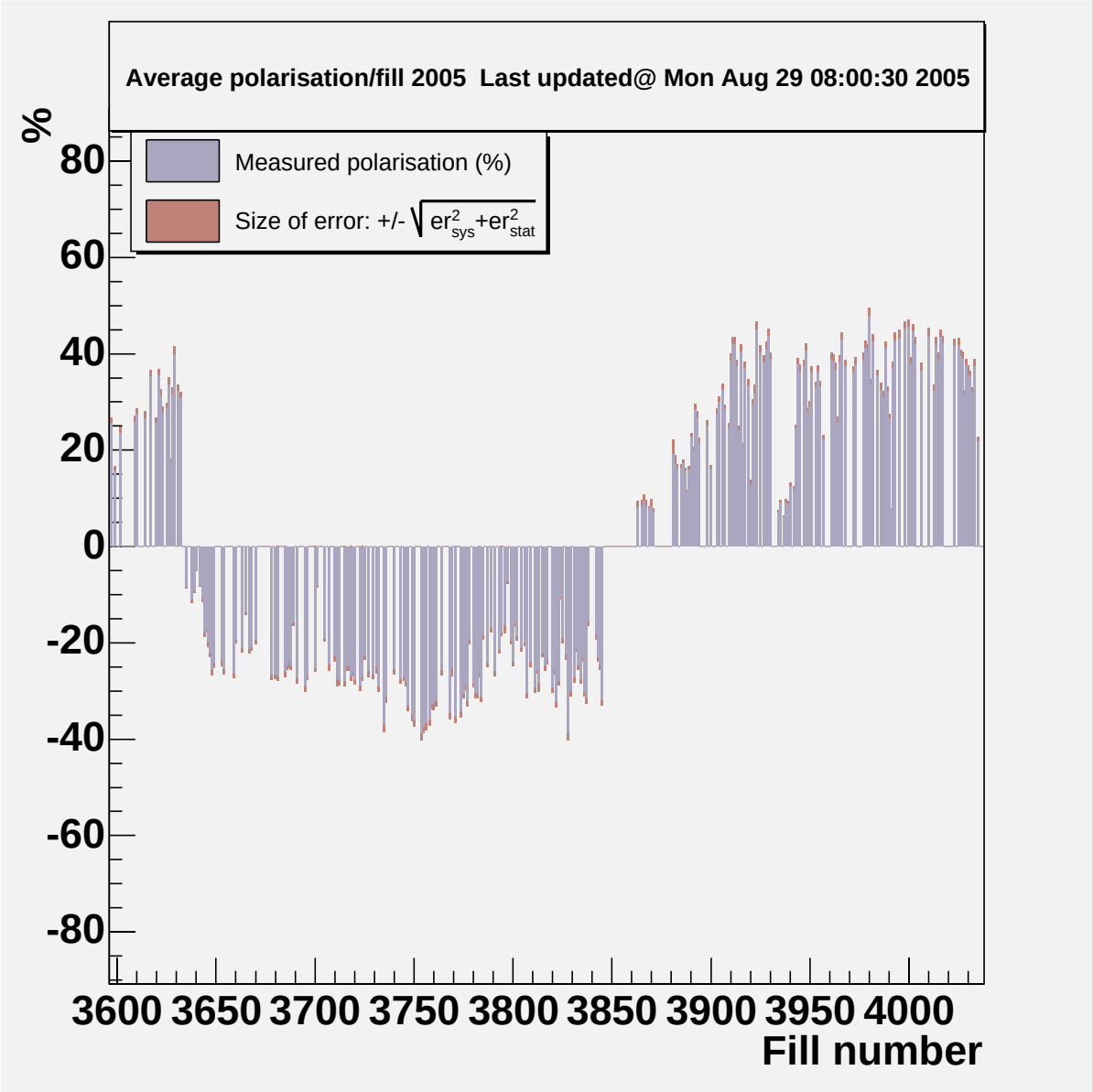
Specific luminosity and beam currents in 2005



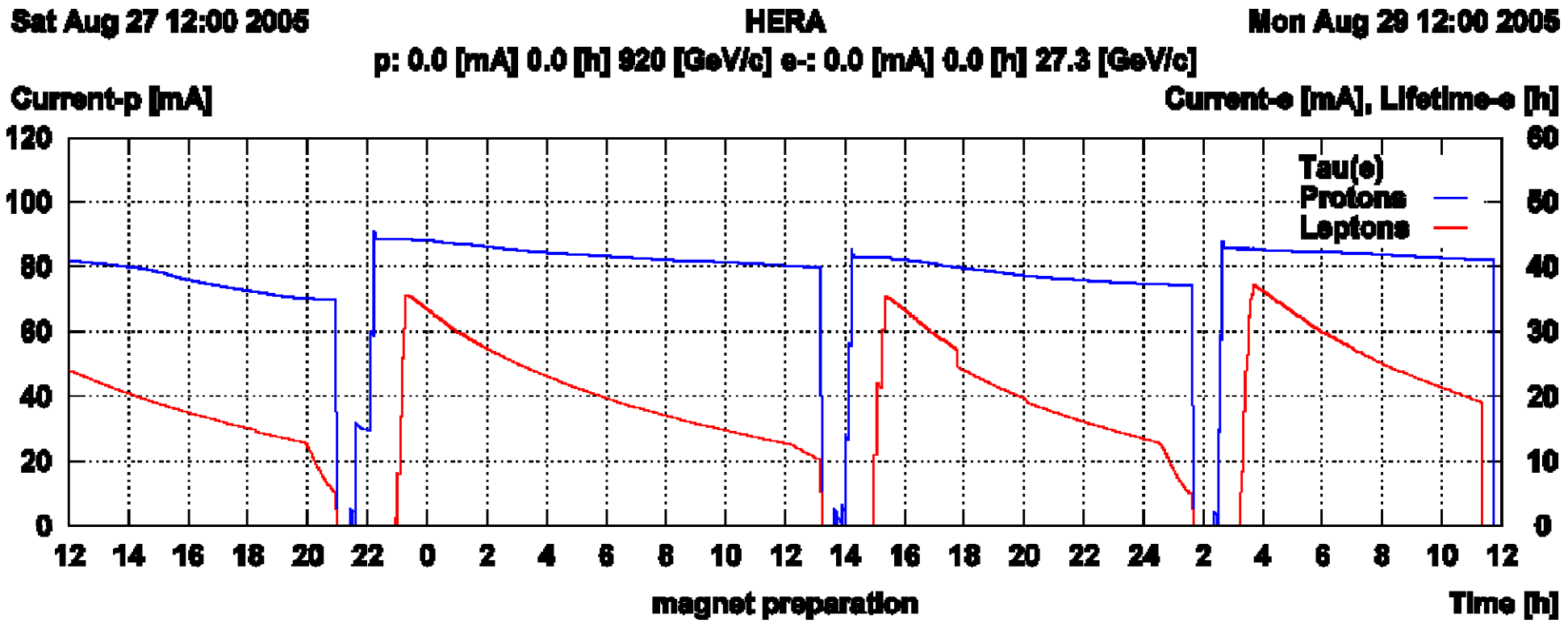


Increase of specific luminosity in recent fills !

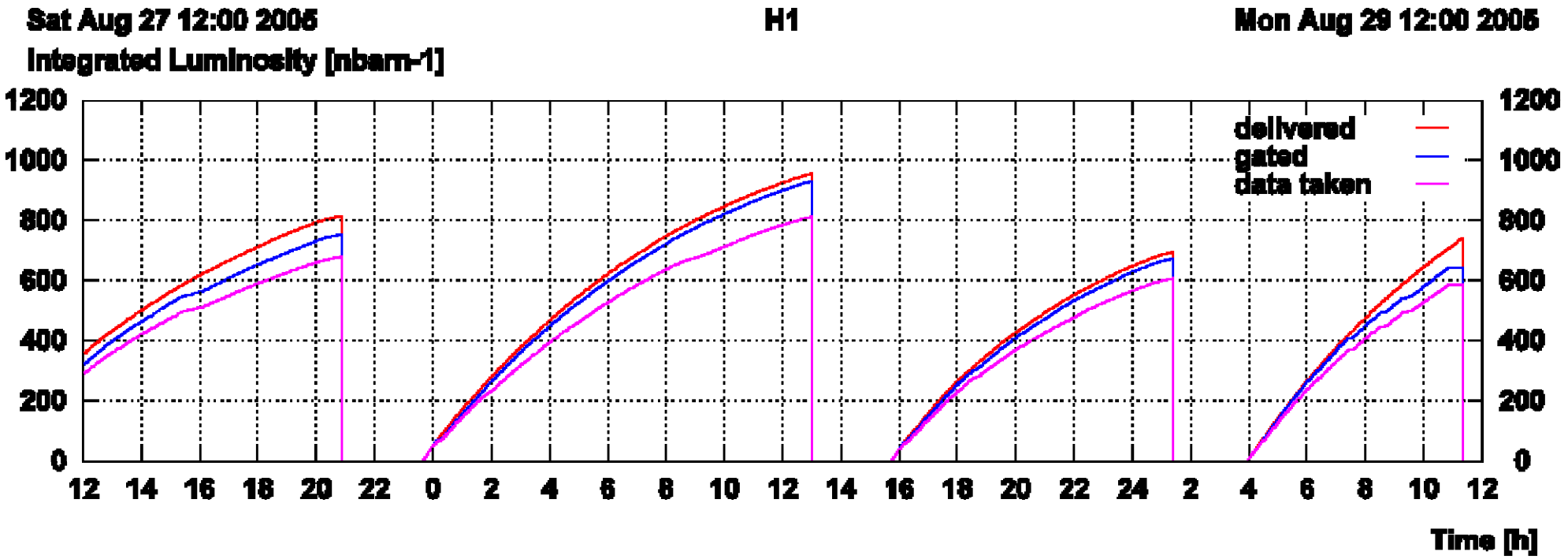
Polarisation

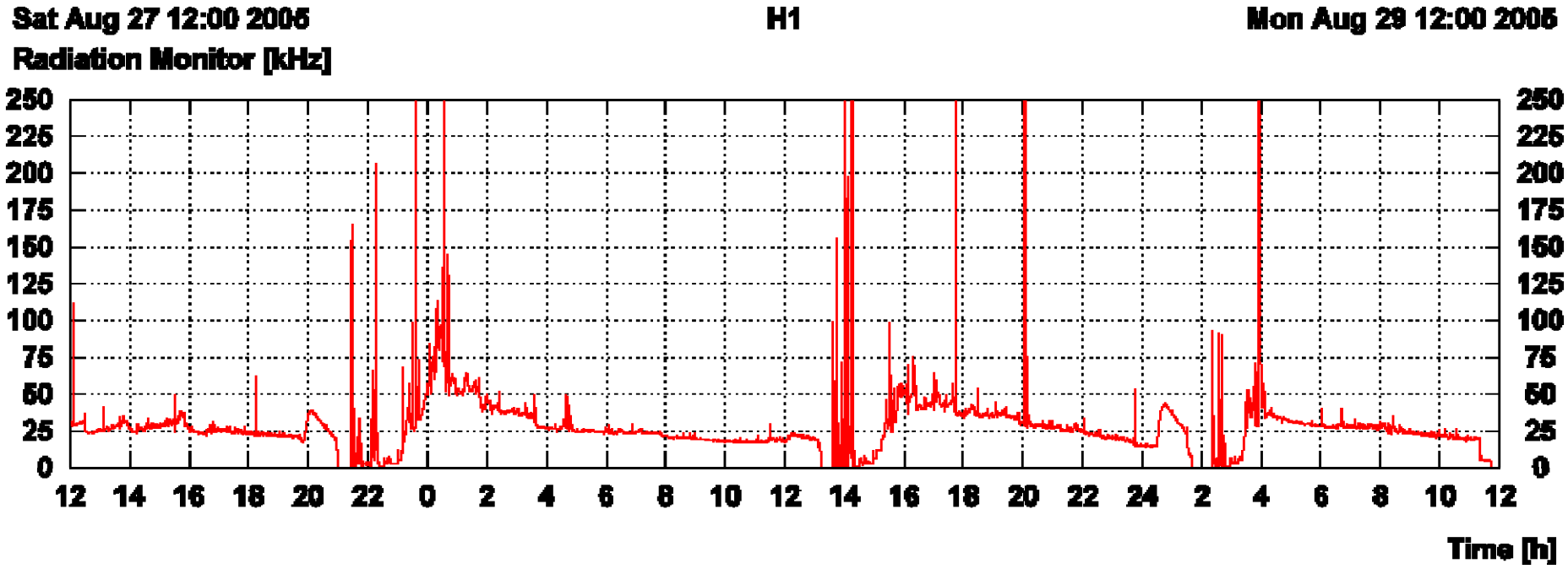


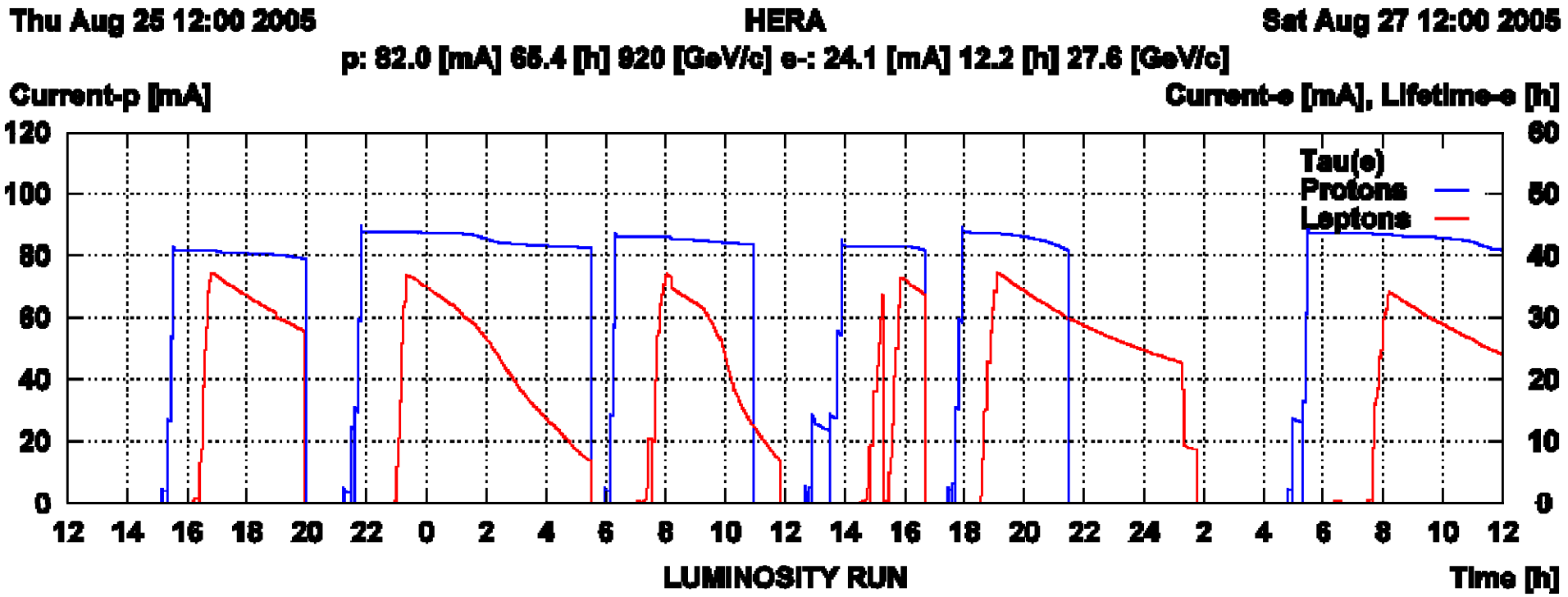
Polarisation did not decrease going from mirror to standard tunes



We are happy to see such beautiful beams !

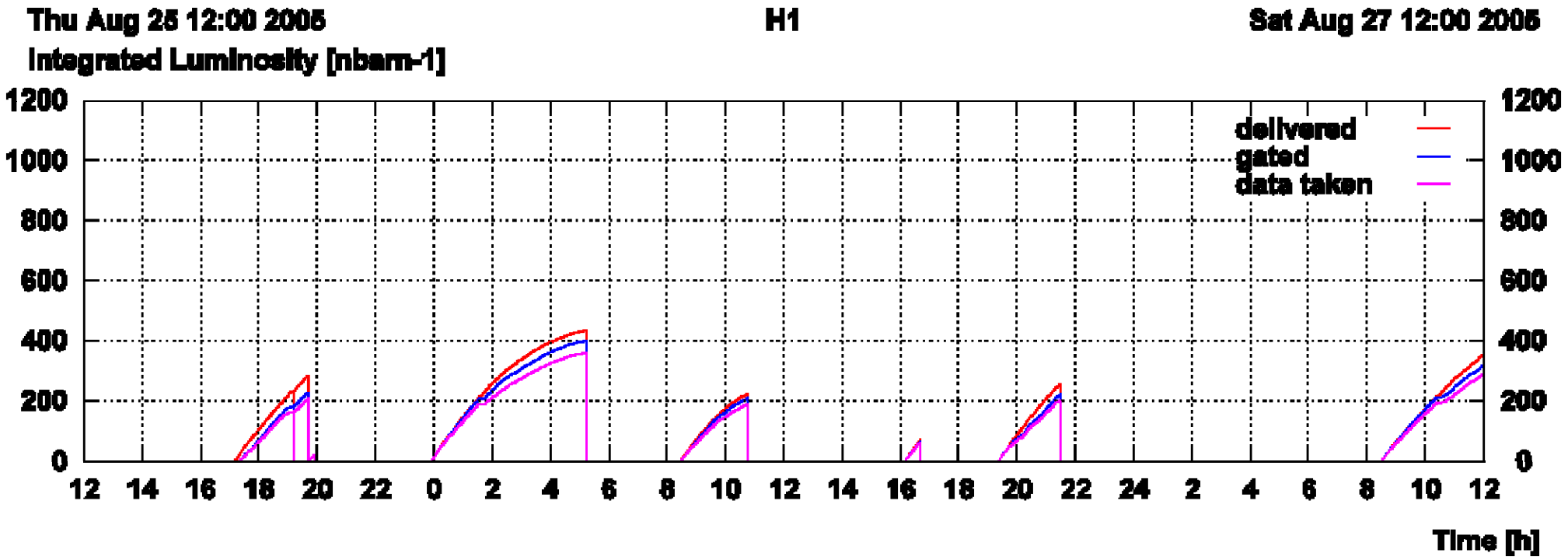

Sat Aug 27 12:00 2005
H1
Mon Aug 29 12:00 2005
Integrated Luminosity [nbarn-1]
delivered
gated
data taken
Time [h]

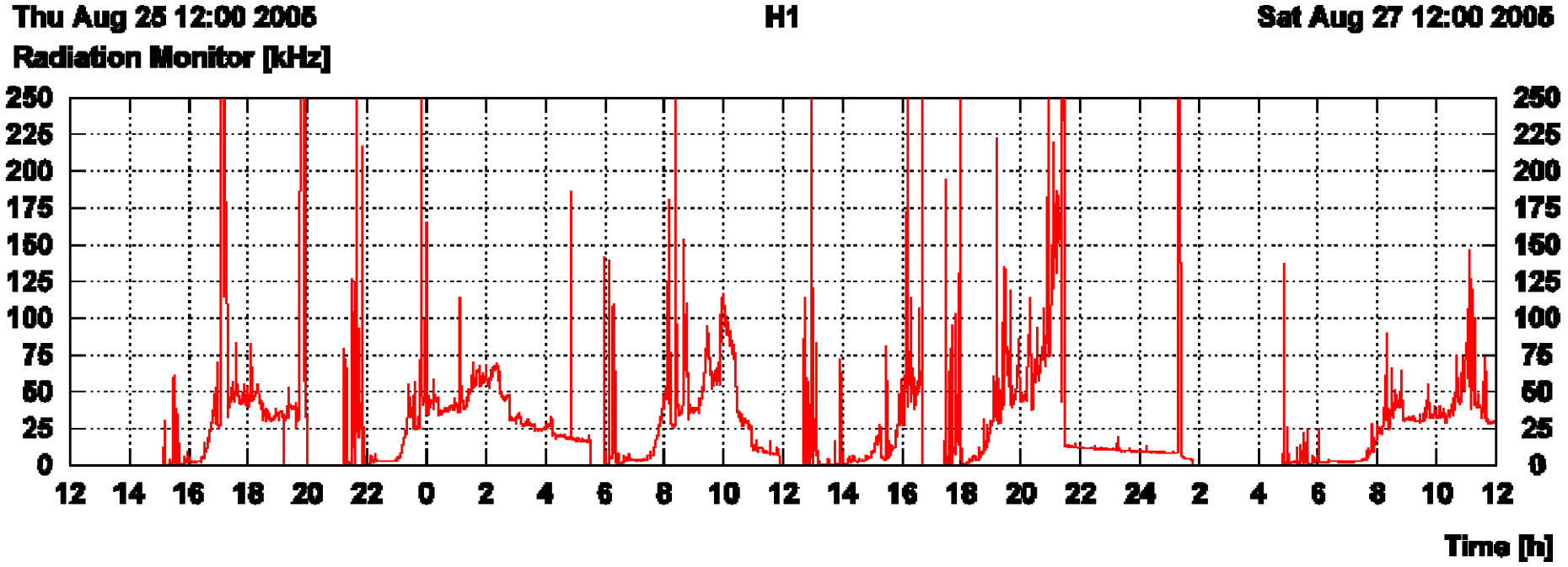

Sat Aug 27 12:00 2005
H1
Mon Aug 29 12:00 2005
Radiation Monitor [kHz]
Time [h]



Unfortunately last week this picture was more typical –

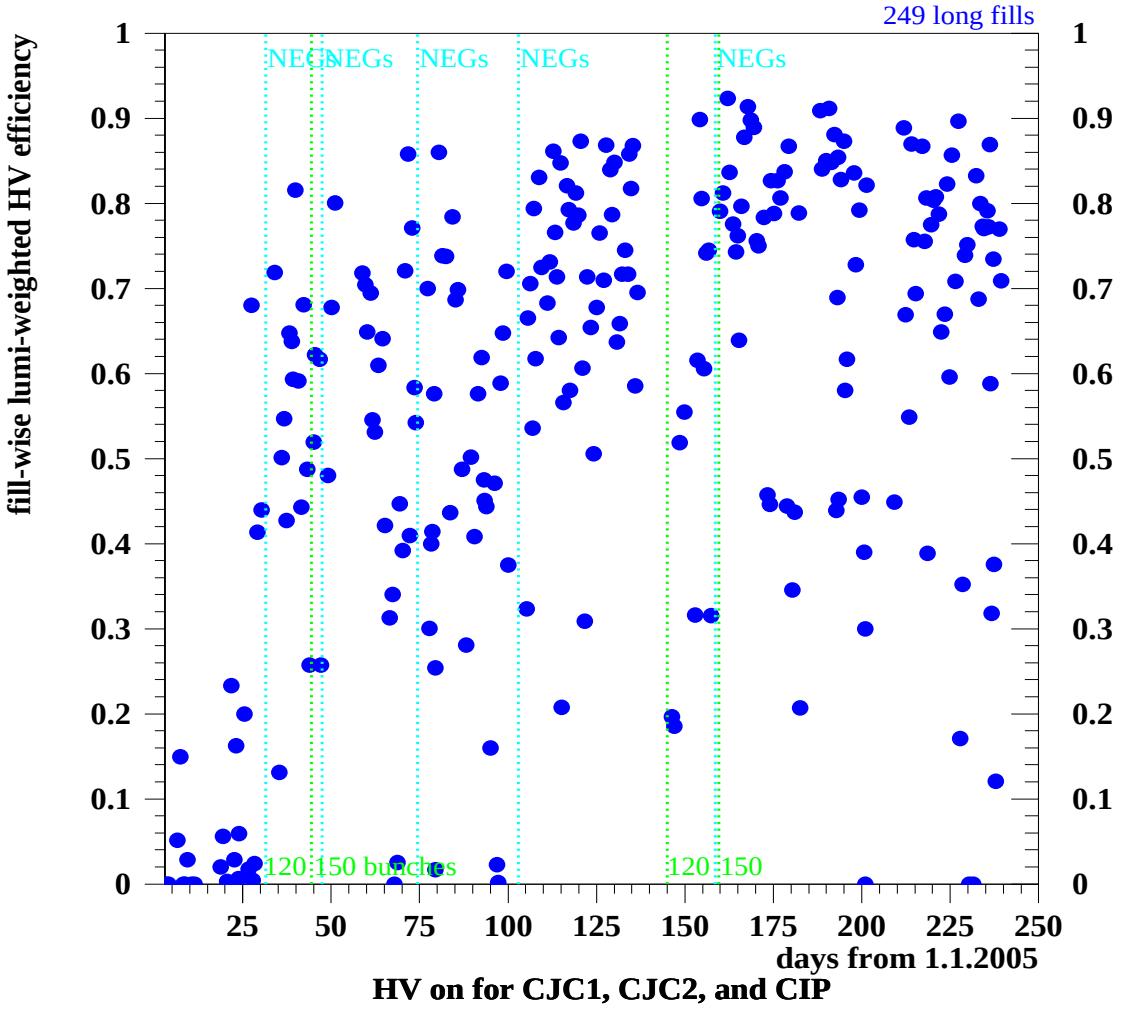
low luminosity, high background …


Thu Aug 25 12:00 2005
H1
Sat Aug 27 12:00 2005
Integrated Luminosity [nbarn-1]
delivered
gated
data taken
1200
1000
800
600
400
200
0
12 14 16 18 20 22 0 2 4 6 8 10 12 14 16 18 20 22 24 2 4 6 8 10 12
Time [h]


Thu Aug 25 12:00 2005
H1
Sat Aug 27 12:00 2005
Radiation Monitor [kHz]
250
225
200
175
150
125
100
75
50
25
0
12 14 16 18 20 22 0 2 4 6 8 10 12 14 16 18 20 22 24 2 4 6 8 10 12
Time [h]

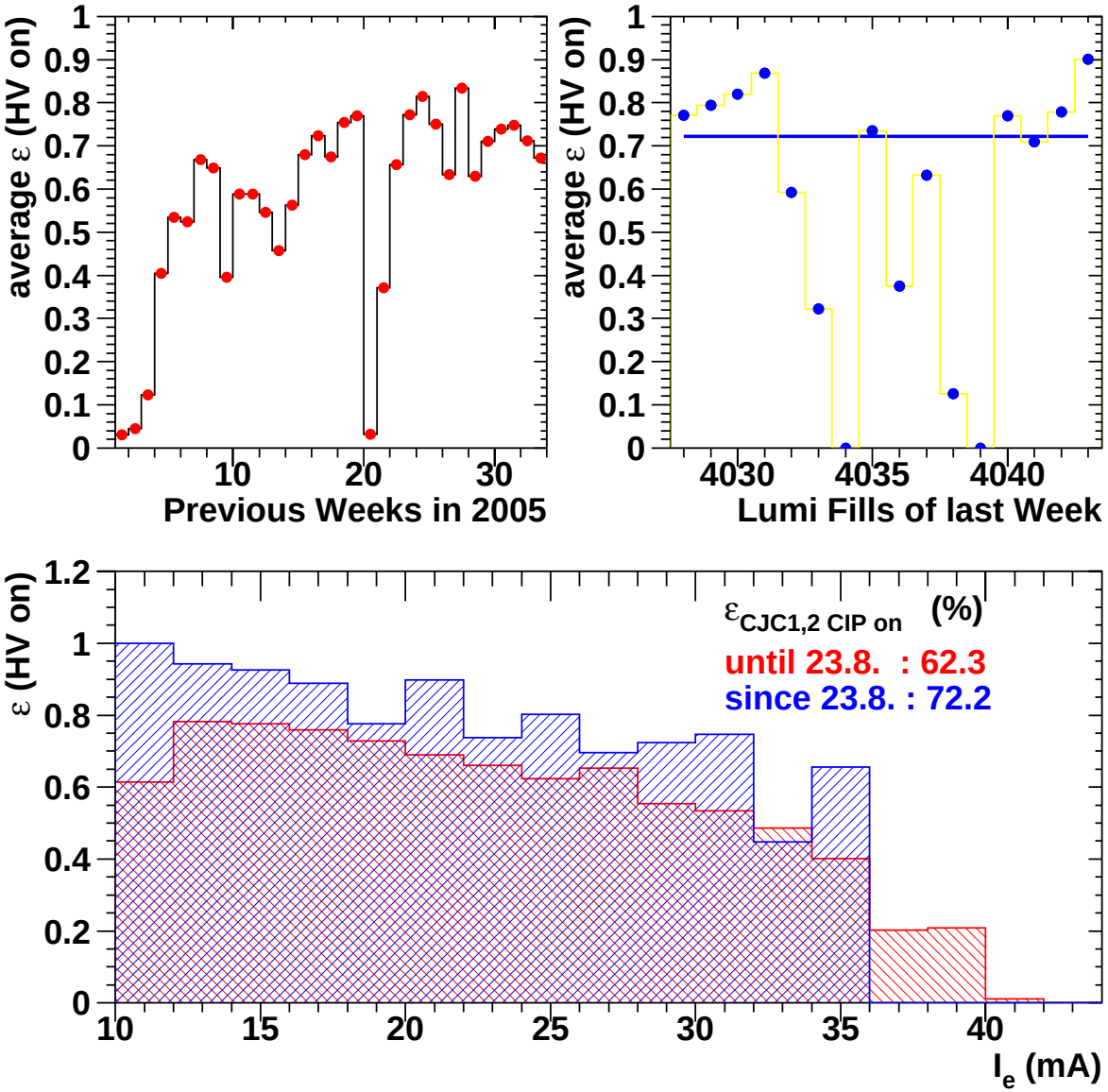
Beam dump initiated by H1

High Voltage efficiency

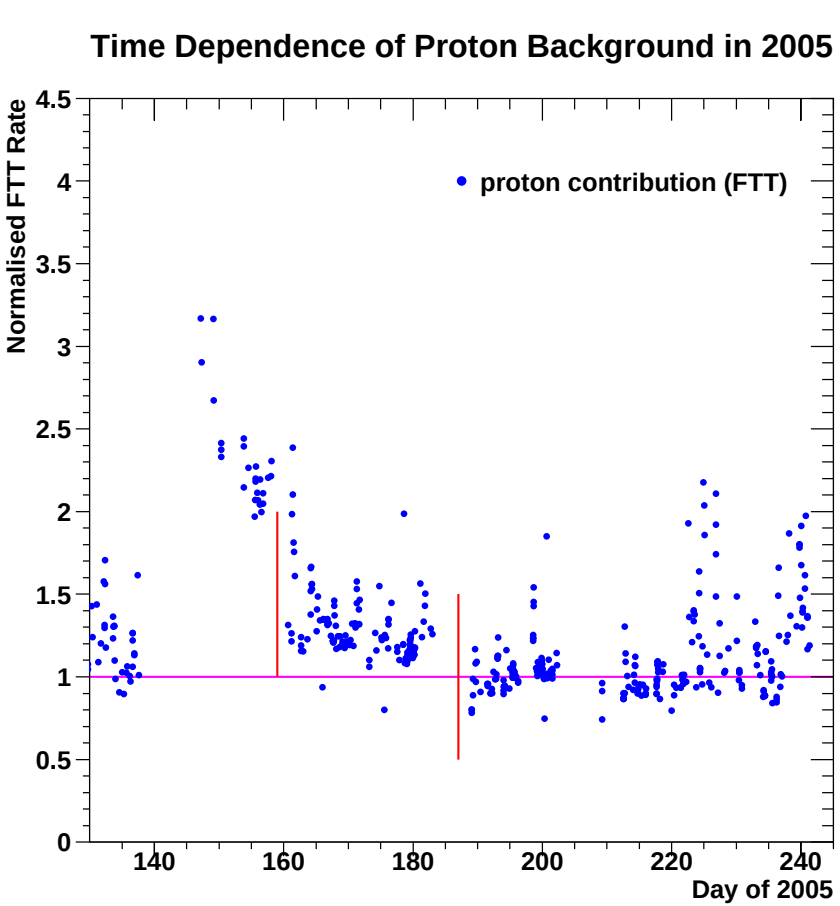


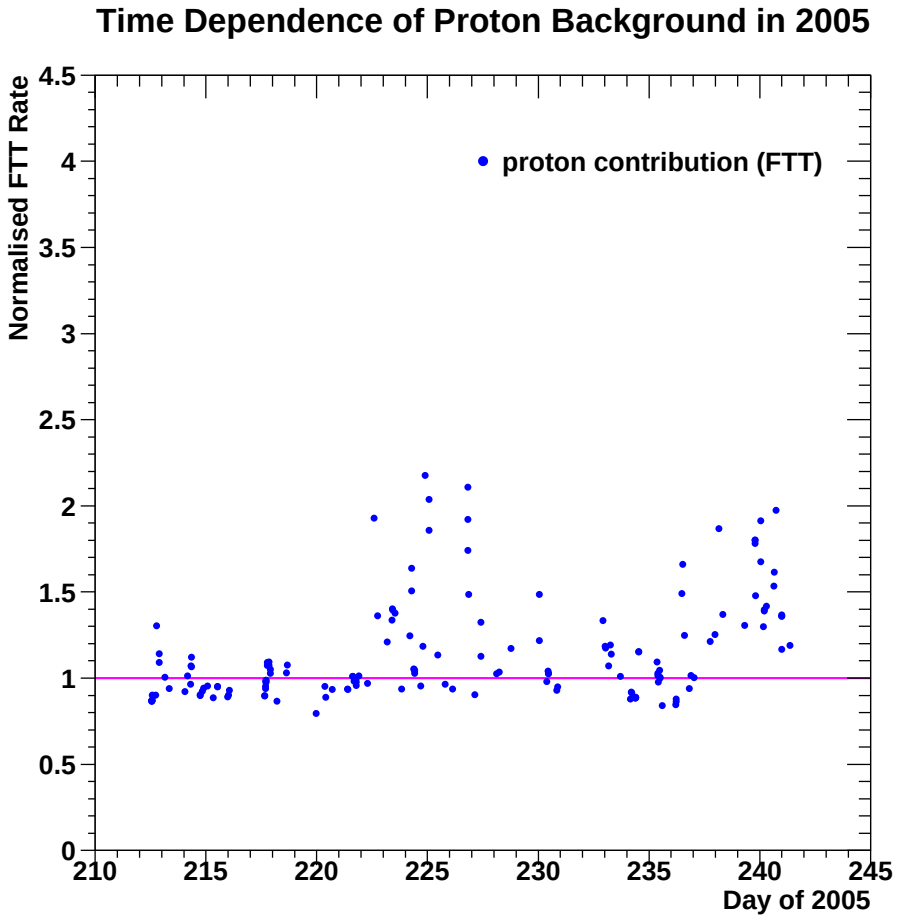
- The HV efficiency is 70-90%
- for the recent runs efficiency was lower because of e-lifetime

HV efficiency in 2005



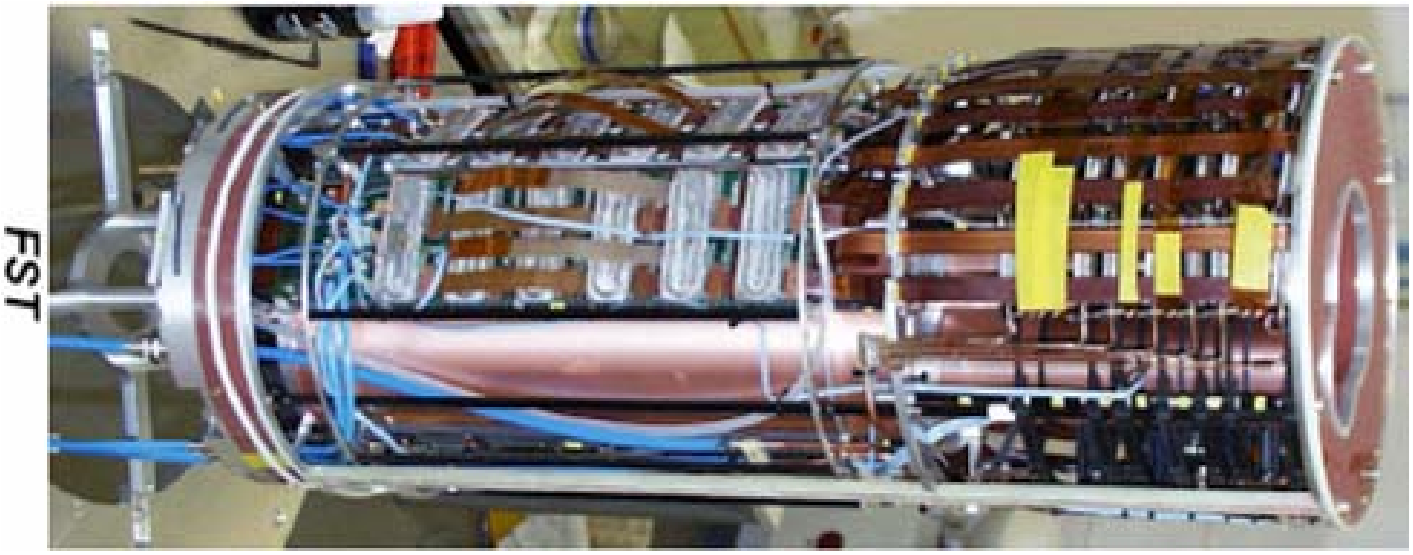
Development of the proton background





- **FTT track trigger rate (~ proton background) normalized to beam currents**
- **For good beam conditions close to expected level**
- **Further reduction expected after the next NEG pump regeneration (maintenance day next week)**

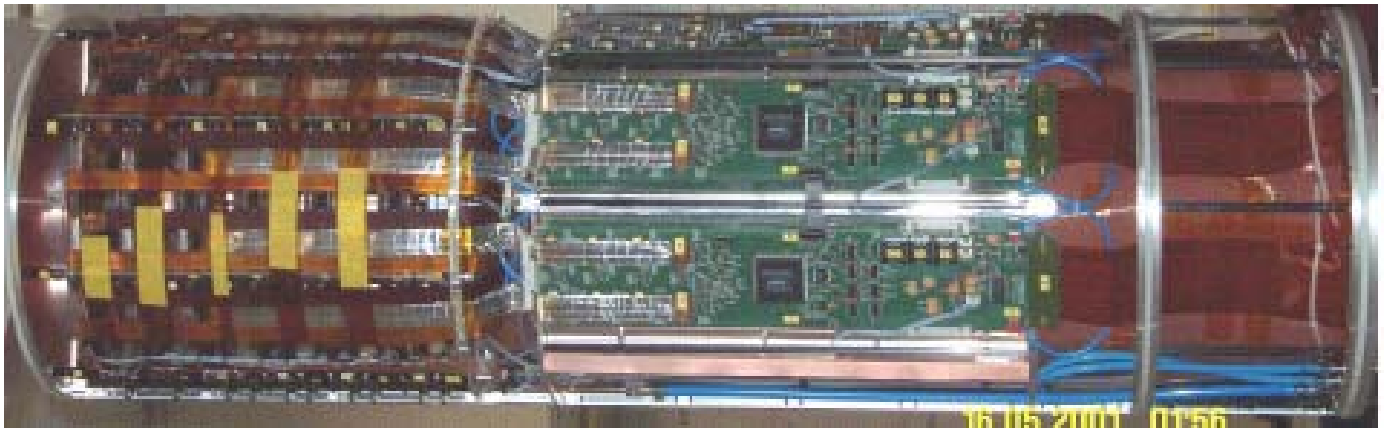
Silicon forward (FST) and backward (BST) detector repairs



p

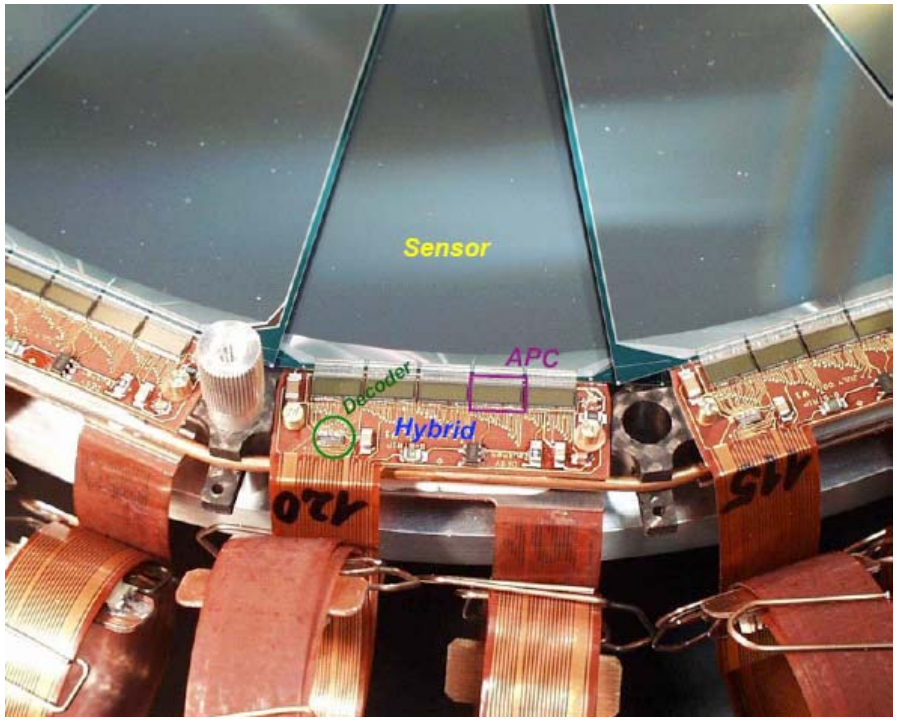
•5 planes of u/v * 12 ss wafers * 5 APC's *128 = 76.8 k r/o channels

e



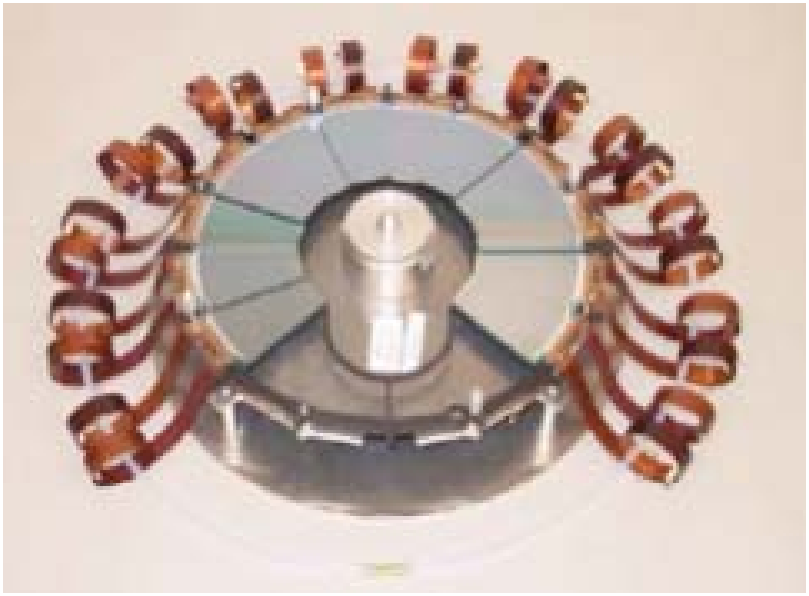
•6 planes of u/v * 12 ss wafers * 5 APC's *128 = 92.16 k r/o channels

Silicon forward (FST) and backward (BST) detector repairs



• BST: Re-use Si sensors and hybrids, equip with rad.hard chips

All modules ready, now mounting (2.5 out of 6 planes ready)



• FST: Everything new, apart from mechanics

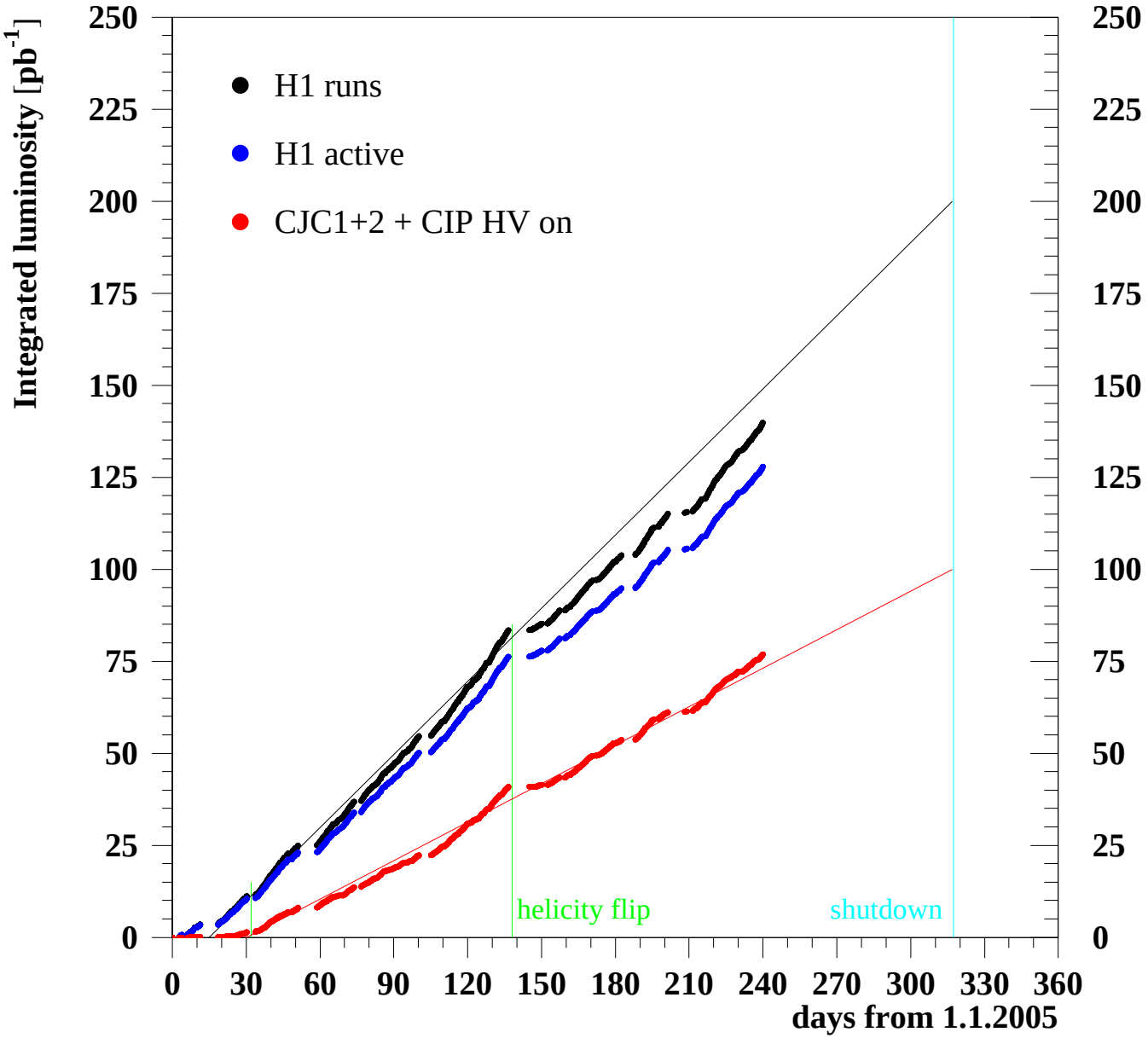
Module assembly nearly ready (90%)

Works on schedule

Ready for installation during shutdown

Summary

- H1 is fully operational
- The HV efficiency for `normal` conditions is in average 80%
- The overall background level is acceptable. Further improvement after the next NEG pump regeneration
- The stability of machine operation is the main concern
- Significant increase of luminosity is crucial for H1's physics program
- The BST and FST repairs are on schedule. Installation during shutdown



100 pb-1 with HV on expected in 2005 before shutdown