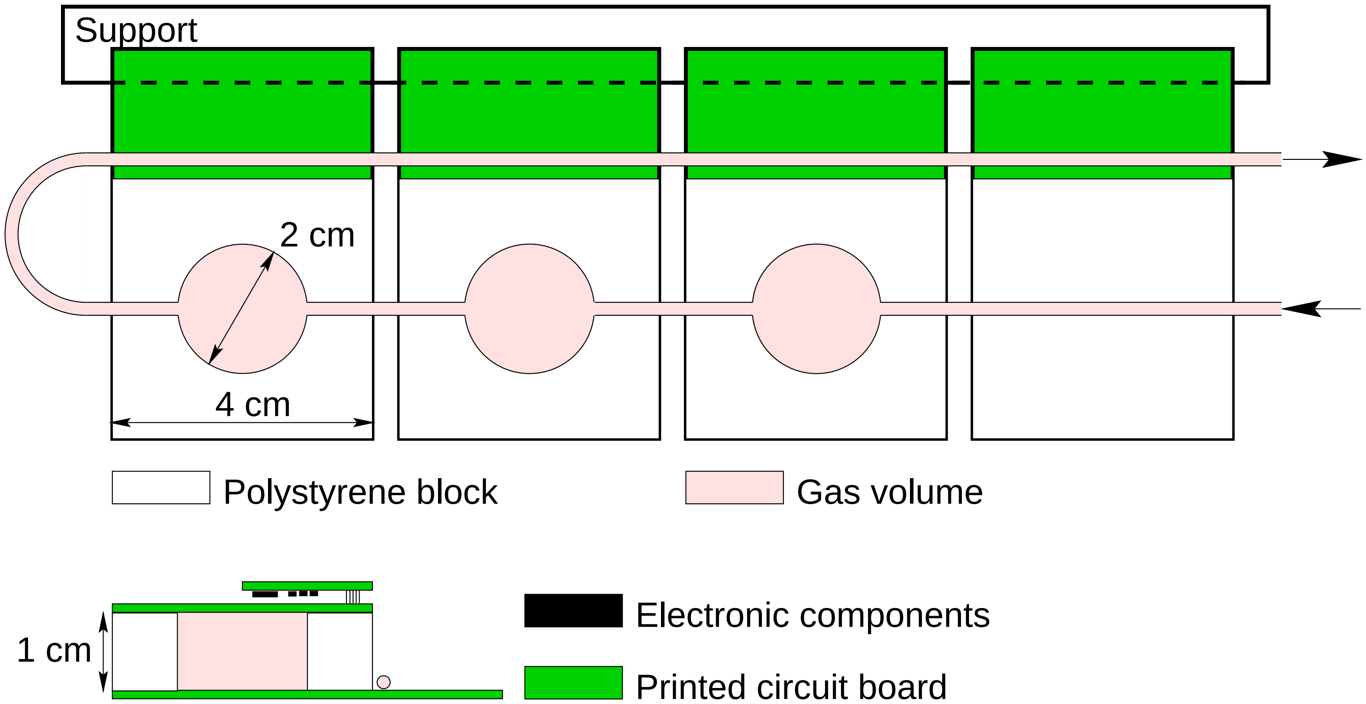
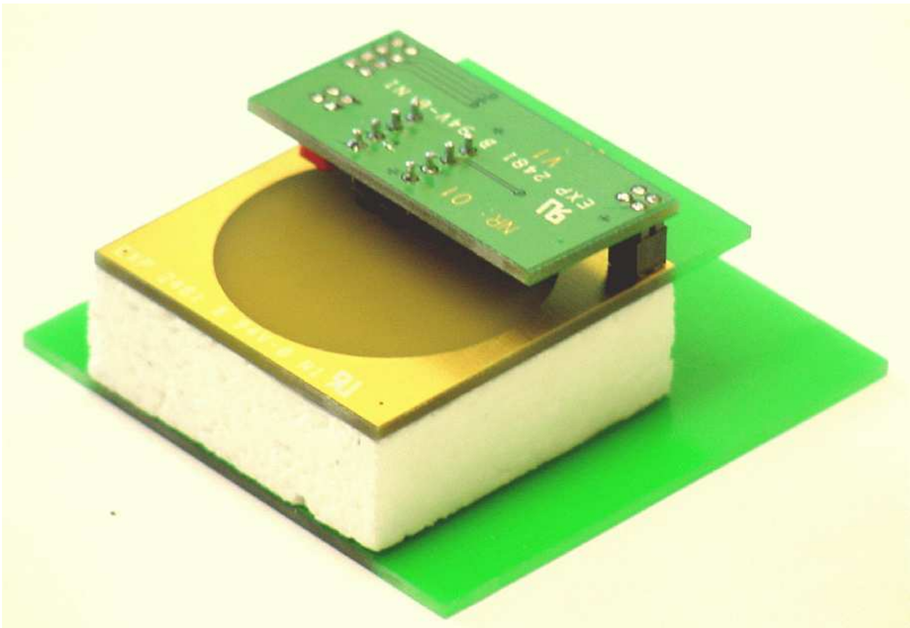
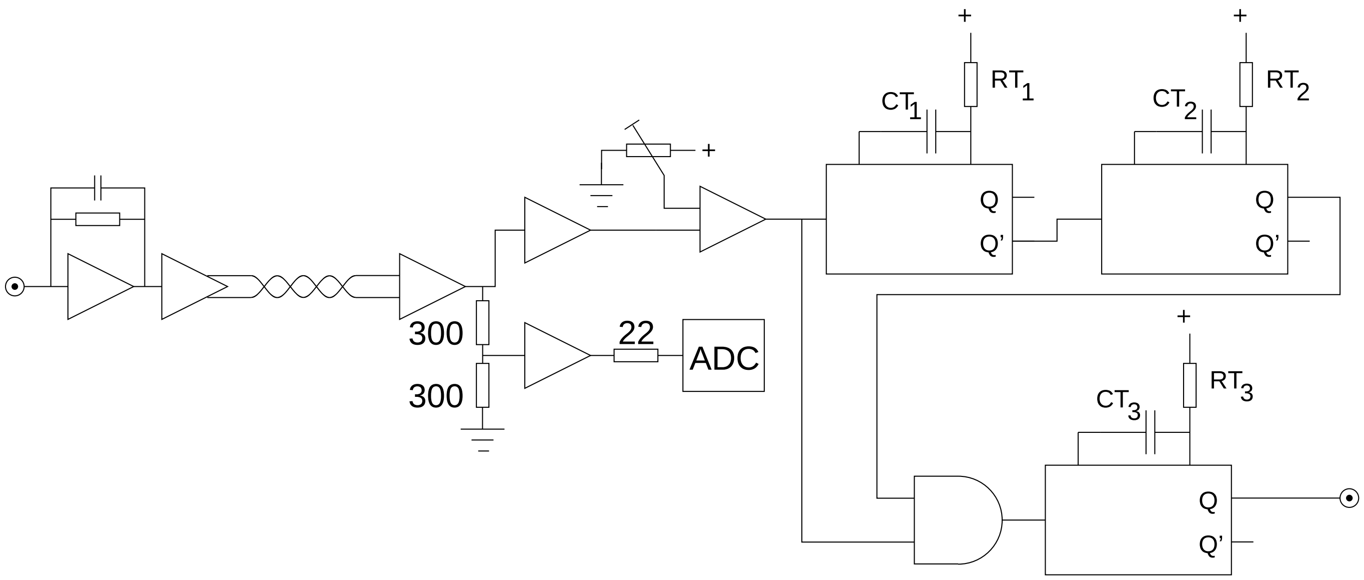
The detectors





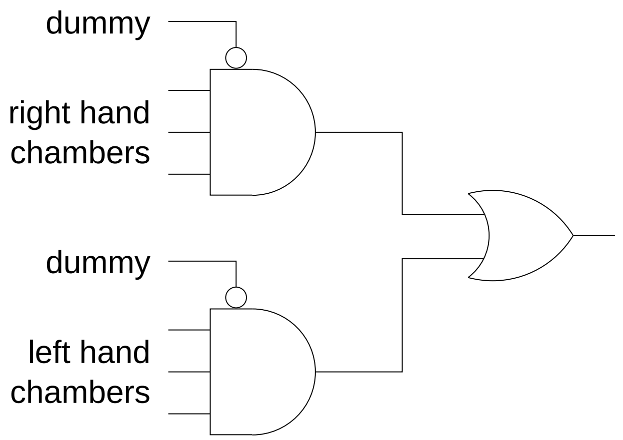
Read-out electronics

Each channel:



Frontend   Linereceiver   Discriminator ADC   Time-over-threshold discr.

Trigger:

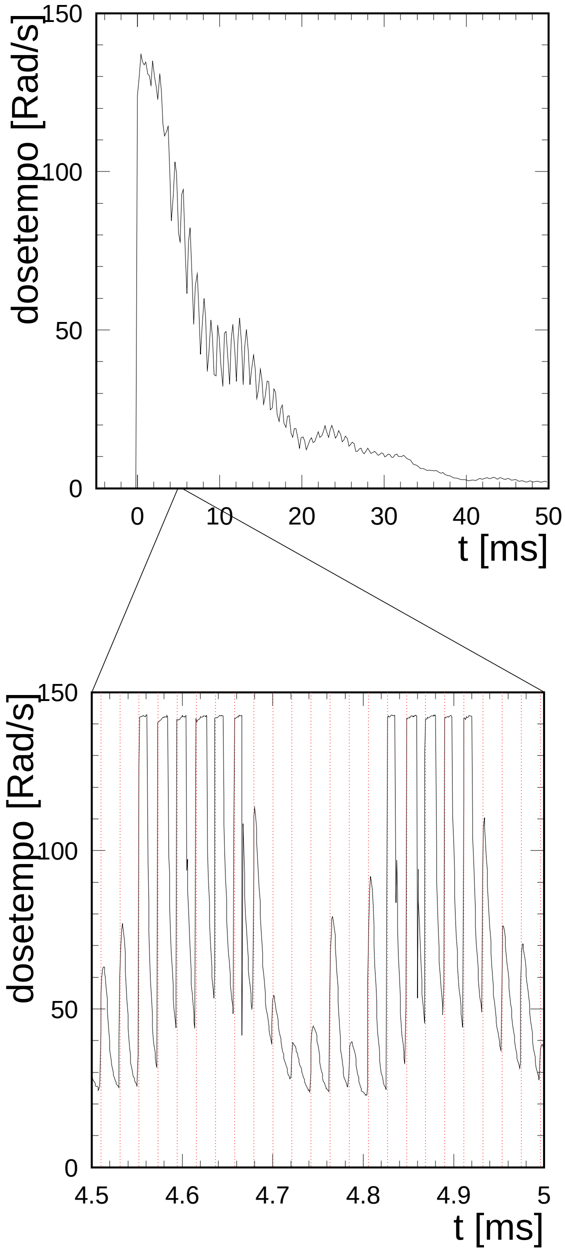


majority logic (2 out of 3)

Timeconstant	value μs
pre-amplifier	5
delay (T1)	2-40
window (T2)	0-3
output (T3)	0.5
dummy out	1

Typical injection

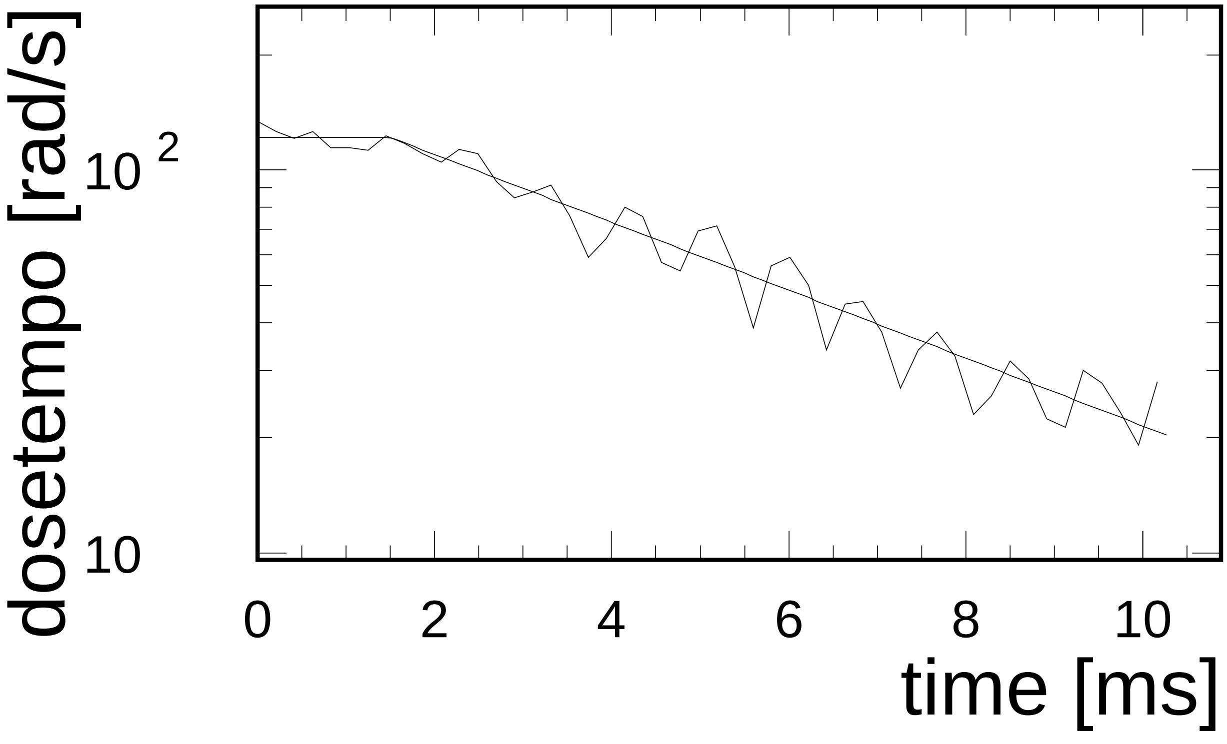
This injection occurred at 08:43:11 on Nov. 9, 2001



the red lines indicate the revolution period of the positron beam in HERA

Typical injection (cont'd)

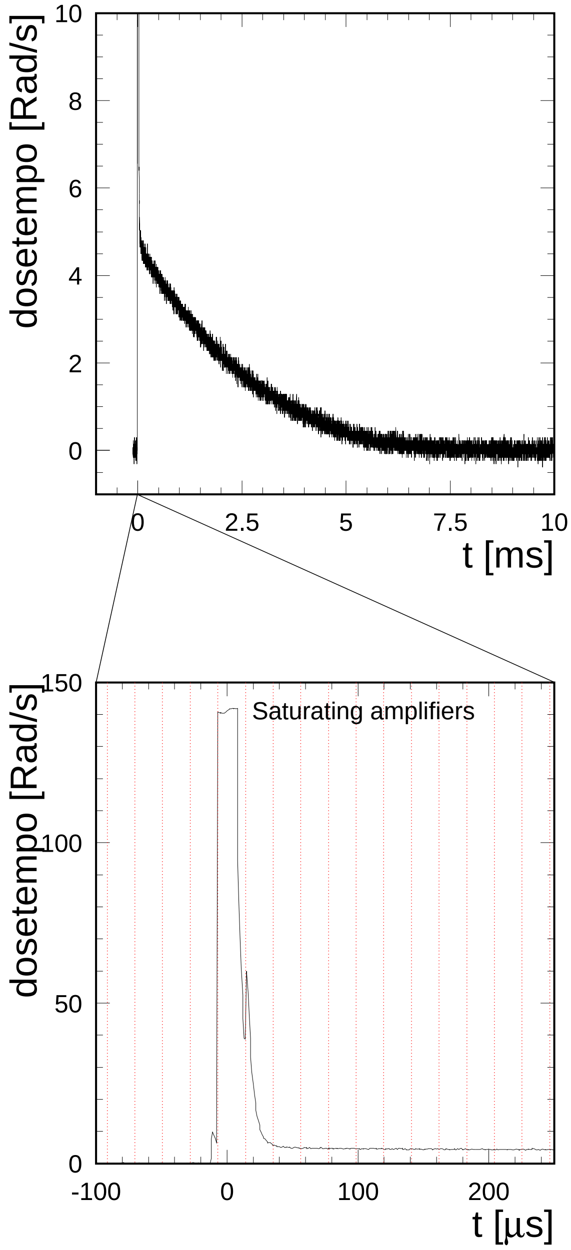
The amplifiers saturate during the flash. The decay of the radiation doserate is used to extrapolate the rate when this is the case. The extrapolated curve is integrated to obtain the dose received in the flash.



timestamp:	Nov 9 08:43:11
decay:	4.90 ms
dose:	0.810 rad

Beam lost in 1 revolution

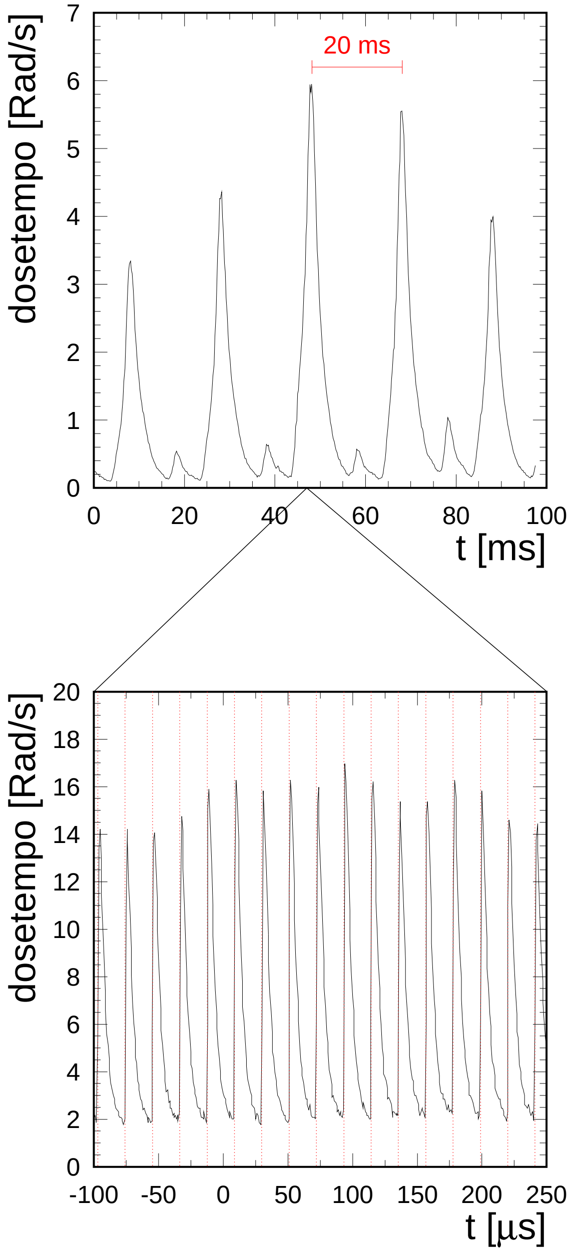
This loss occurred at 05:54:04 on Nov. 5, 2001



the red lines indicate the revolution period of the positron beam in HERA

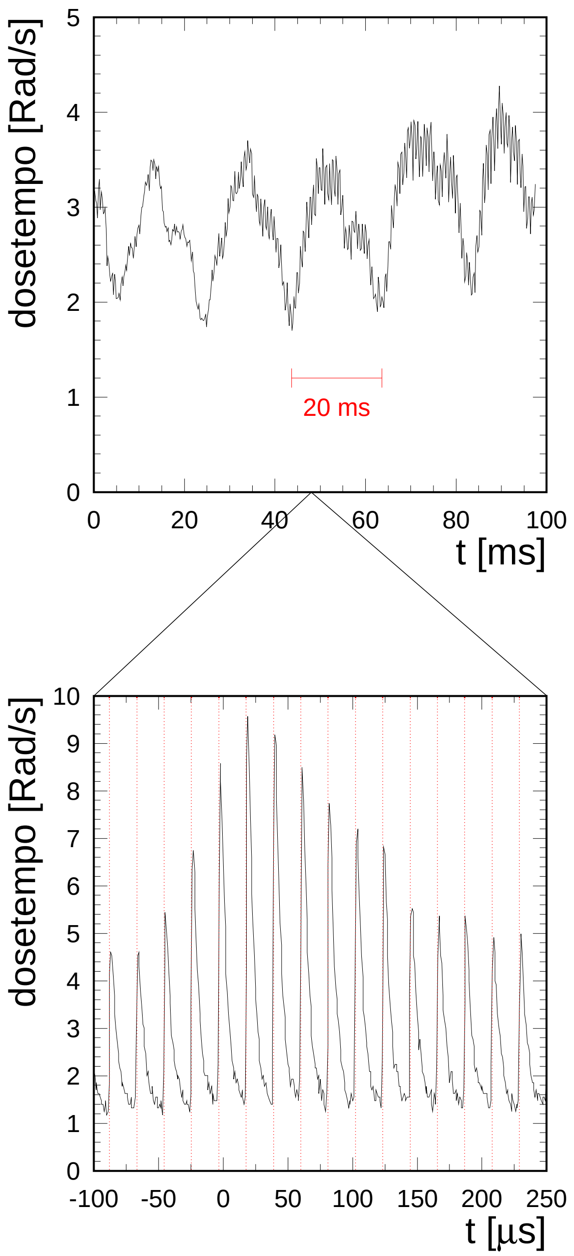
The 50 Hz problem

This record is taken at 11:29:40 on Nov. 8, 2001. The increased radiation was produced between 10:15 and 12:15 hrs. The total dose in these two hours is estimated to be 4 kRad at the position of the BLM in HERMES. This problem occurred also at eg Oct. 23, 25, 26.



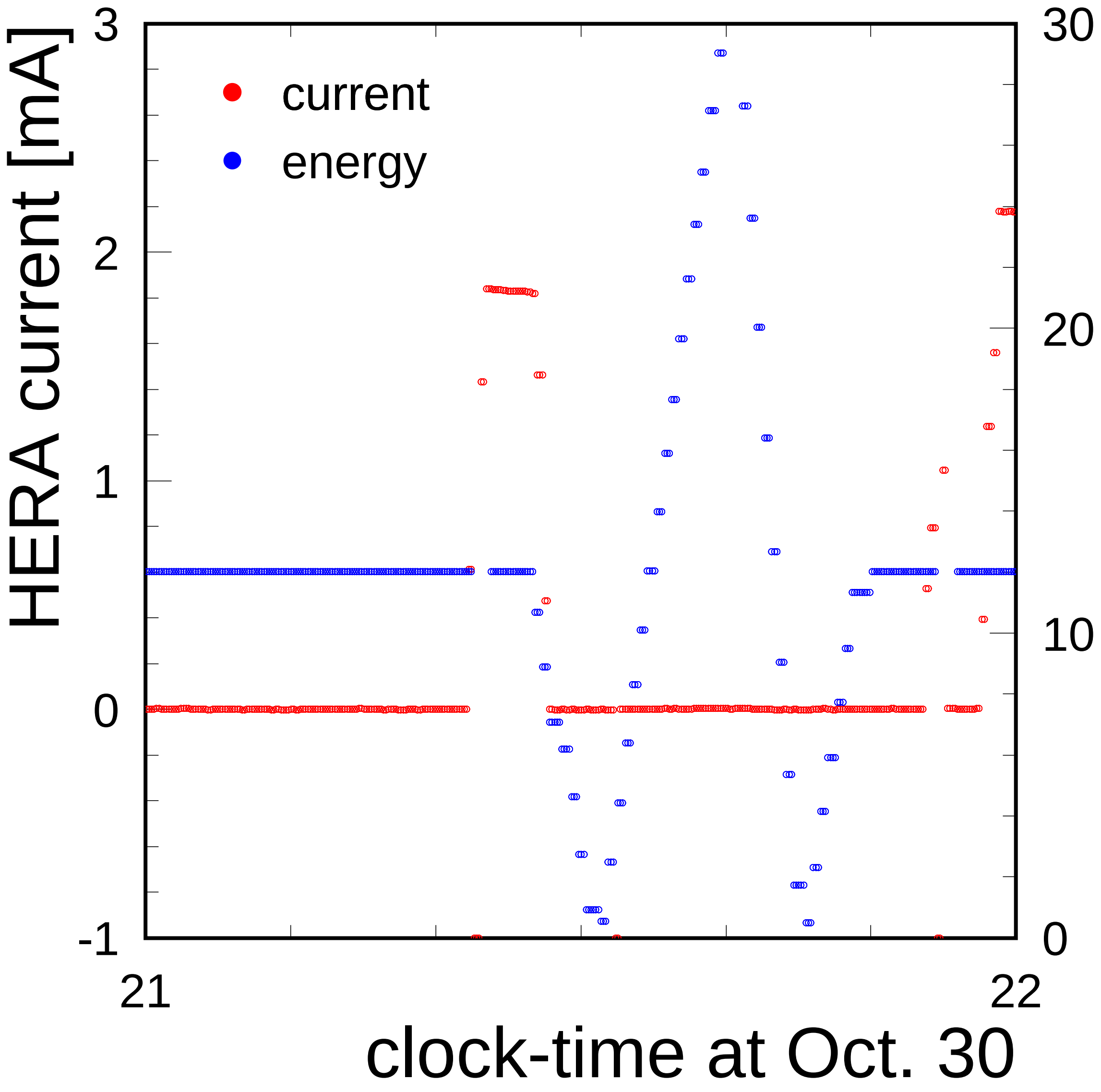
Scraping beam

This record is taken at 21:27:00 on Oct. 30, 2001. The increased radiation was produced between 21:26:44 and 21:27:29 hrs. The total dose in this minute is estimated to be 0.2 kRad at the position of the BLM in HERMES.



Scraping beam (cont'd)

At 21:27 the magnets in the positron ring were adjusted to zero field while the beam was in the machine. This caused loss of beam detected by the BLM. Excerpt of the slowlogs from that time:



Triggers

List of triggers generated between Oct 17 and Nov 9. Note in this period the thresholds were not yet final (were being changed on the basis of the measurements).

day	time	remark	beam lost
oct 23	8–10	50 Hz	often partly
oct 23	12–14	50 Hz	often partly
oct 25	21:15–21:30	50 Hz	partly
oct 26	0–1	50 Hz	partly
oct 26	17–19	50 Hz	often partly
oct 30	21:27	magnets off	yes
nov 2	03:54	dump	partly
nov 3	01:46	50 Hz	partly
nov 4	20:07	?	no
nov 8	10:15–12:15	50 Hz	often
nov 9	08:28	?	partly

A few of these would be prevented by changing thresholds: Nov 9, Nov 4, Nov 2.