

W.Z.

ZEUS STATUS

HERA COORDINATION MEETING

20.10.2003

In general all components are operational
ZEUS is ready for data taking

Recent Problems:

Sept.22 – Oct. 8:

Problems with solenoid control electronics – magnet was off for several days

Problem “solved” for the moment by swapping units

Received spare parts from Univ. Hannover

Parts of the equipment are out of production and maintenance by the producer

Ansaldo is offering lifetime maintenance – we are checking costs and terms

Refurbishing the control system is a major enterprise

- might require a shutdown, time unclear (~ 2 weeks - personal estimate)

Recent Problems cont'd

Sept. 26

Vacuum leak south right 11m

October 7

A power supply of the CTD readout burned out

Caused a fire alarm in the electronics trailer with release of Inergen.

Reason for the burn out not understood – engineer from UK needed for final repair, for the time being running with a “hole” in the R/O

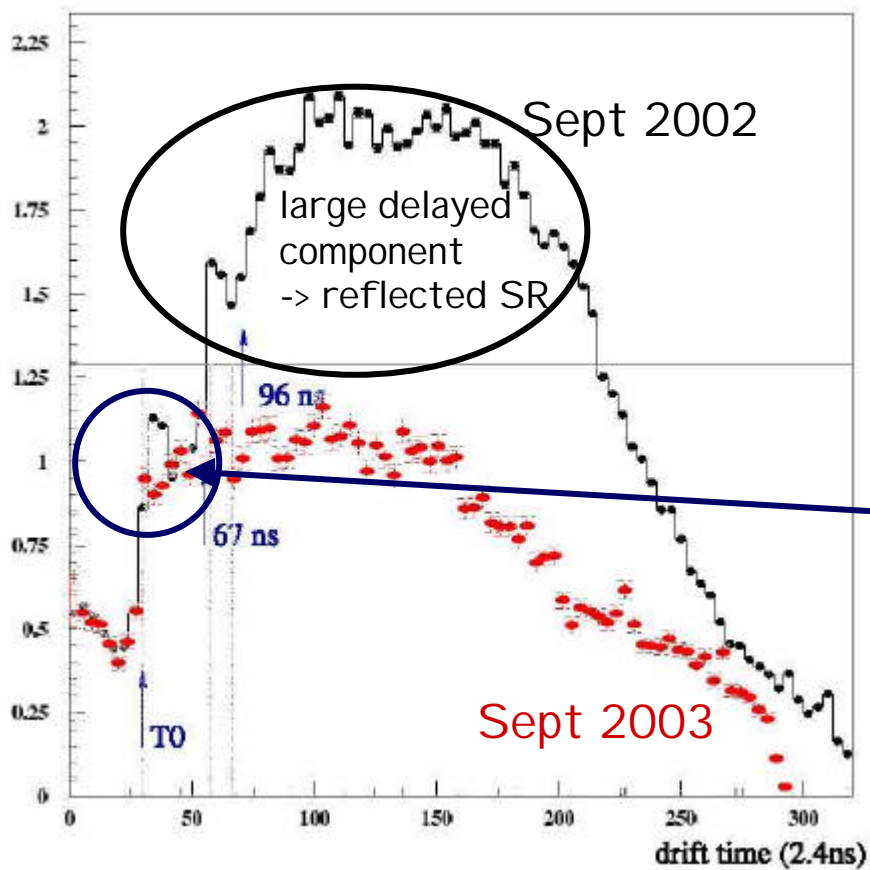
Estimated time for repair ?? days

→ Detector is getting older

→ Bits and pieces are becoming fragile and difficult to repair

→ Maintaining the experience for all components becomes harder

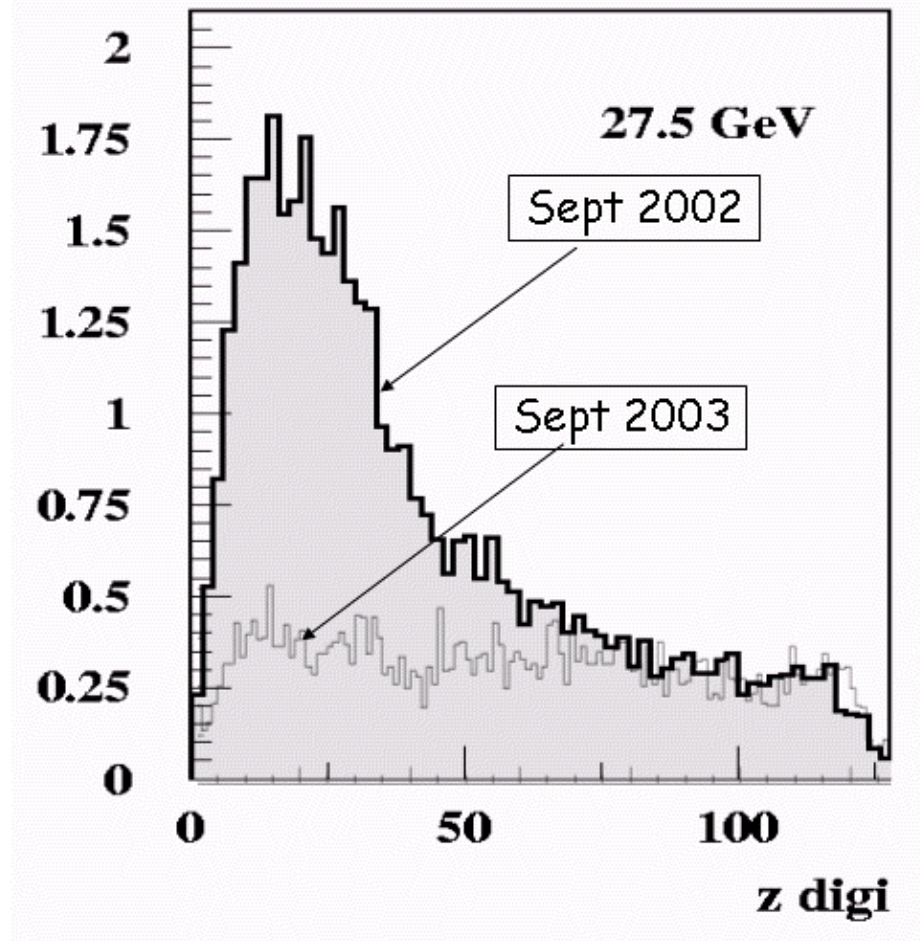
Background CTD Drift Time Distribution



Run from Sept 24th 2003:

- No evidence of delayed component
⇒ No reflected synchrotron radiation
- In-time component (e-gas) similar to Sep 11th 2002

Background CTD z-distribution



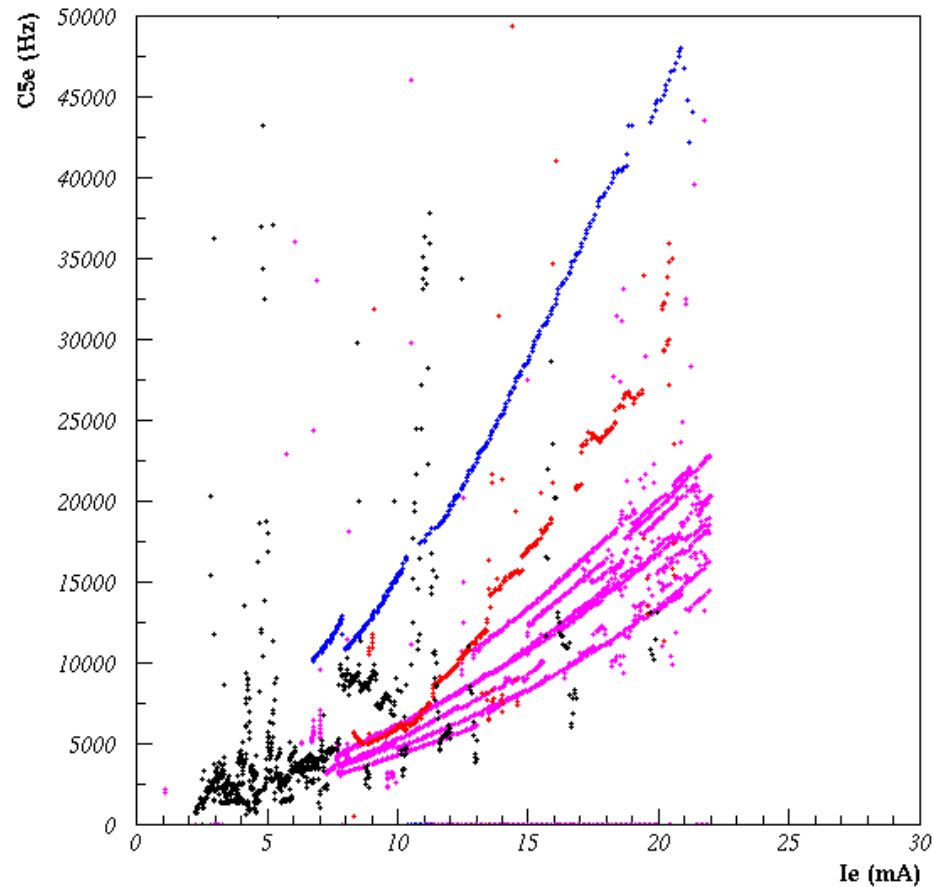
Run taken September 24th:
z distribution flat
⇒ no reflected synchrotron
radiation

Run from Sept 2002 shows
reflected synchrotron
radiation from rear

- **Clear indication that the new C5 masks do their job !**

Background

Recovery from Vacuum leak



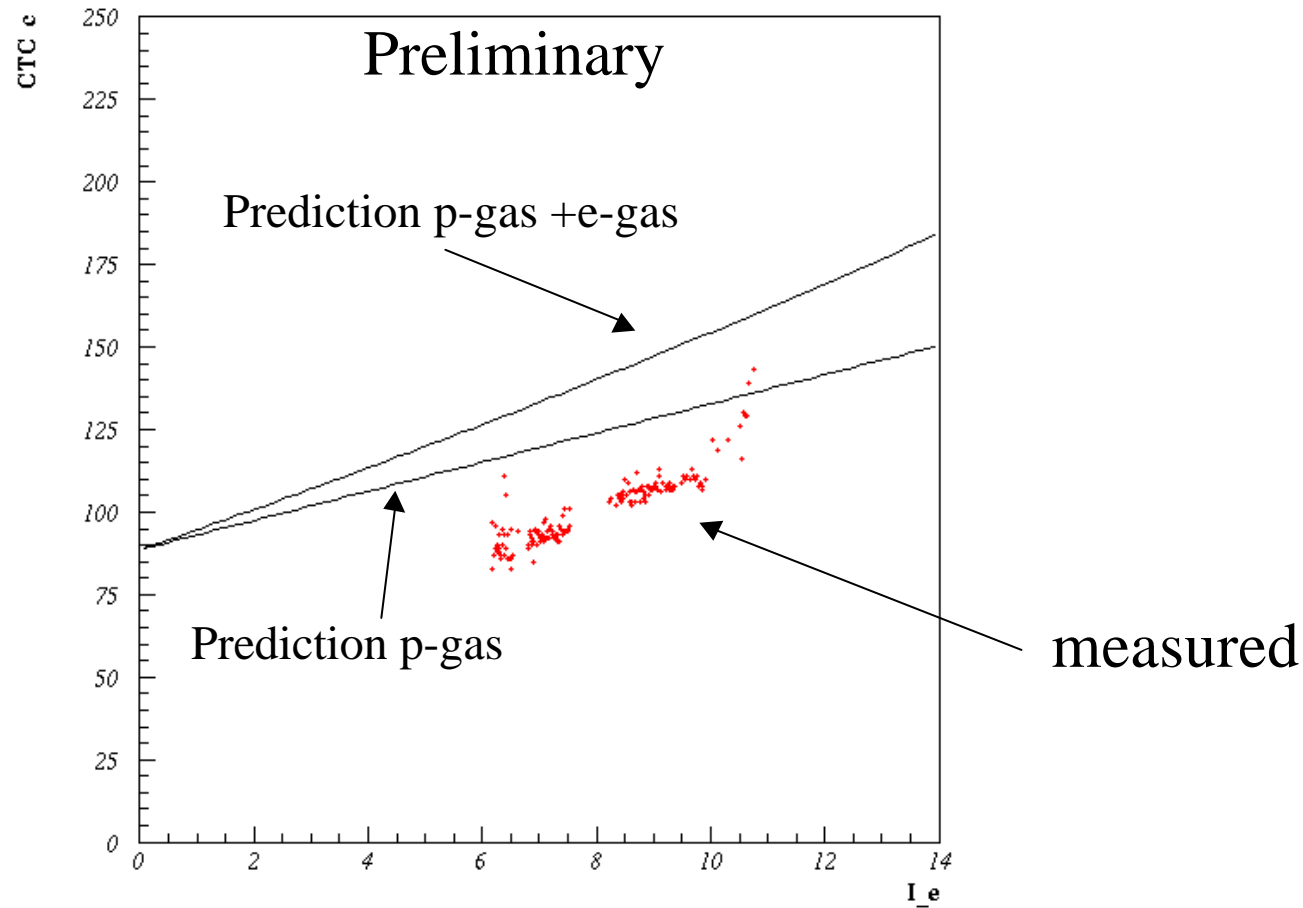
Black: recent runs

For e-gas background no big difference
before and after leak visible

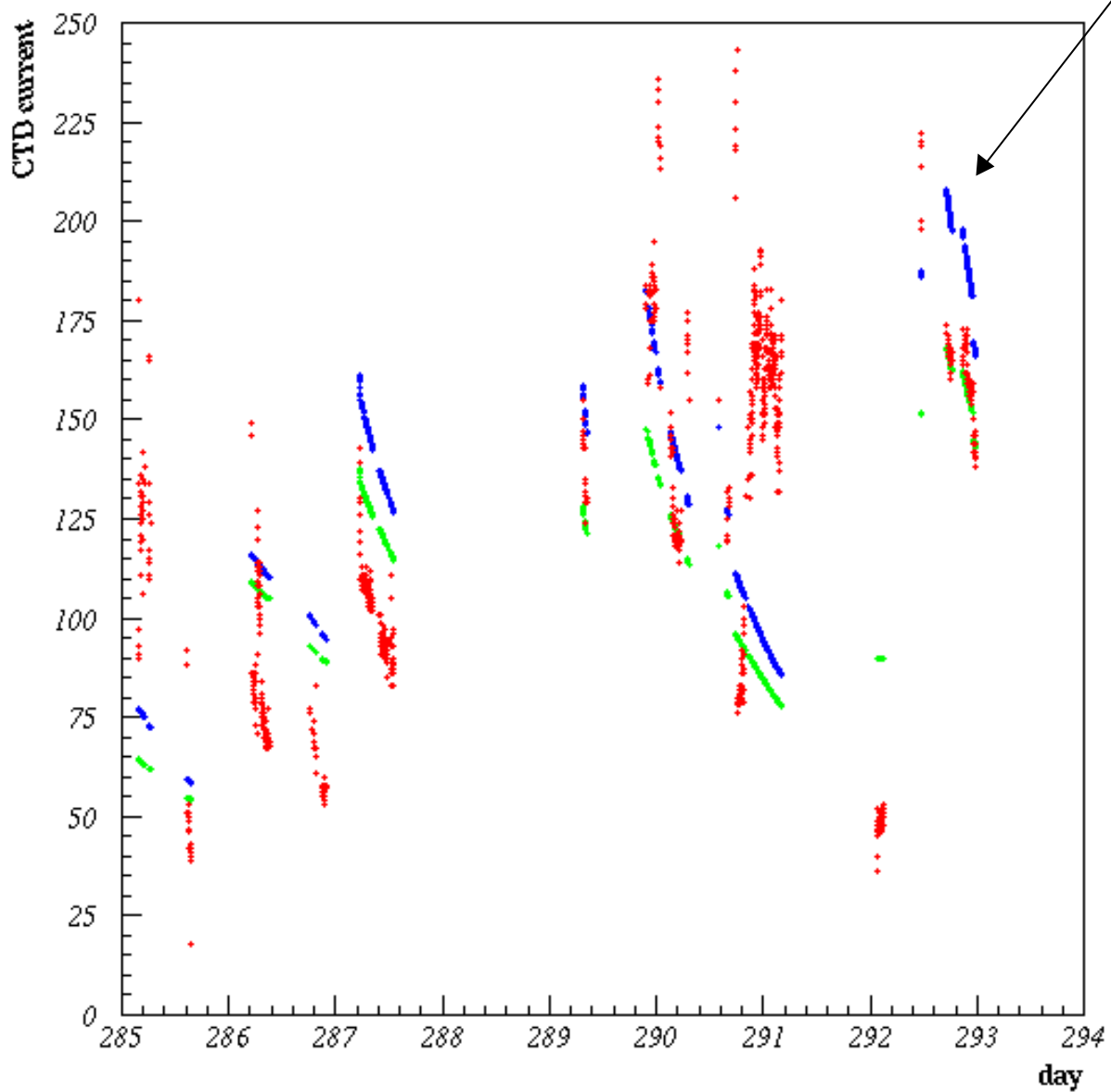
Expected CTD Currents

Empirical formula from end of last year

$$I(\text{CTD}) = 15 + 1.55 * (1 + 0.06 * I_e) * I_p + 0.03 * (50 * I_e + 2.2 * I_e^2)$$



CTD Current vs. Day



Last night
Oct. 19/20

Red: data
Blue: Prediction
p-gas+e-gas
Green: Prediction
p-gas

ZEUS Plans for a shutdown

- For ZEUS there is currently no need for a shutdown
- To make optimal use of the remaining running time of HERA the next shutdown must be combined with the switch of HERA to electrons.