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DESY-Hamburg

Target Monitoring & Counter Setup 98

- **Triggerring:** has to be removed
- **Si-Pad:** exit window of VDS-vessel, a=$\mathcal{O}(1\%)$
  $\Rightarrow$ effort to understand the system, stability ?
- **Veto Counters:** 2 sets, similar to 97
- **E-Beam Counter:** similar to 97 (space ?)
- **TMS:** at least in 1. target station
- **Charge Integrators:** for all wires
  $\Rightarrow$ effort: calibration, stability ?
- **Bar Counters etc.:** install several scintillating counters on main platform (and muon ?) if there is space
- **Info from HERA-B Detector:**

  ▷ μ-pretrigger ▷ ECAL-pretrigger inhibit
  ▷ SLT-vertex $\Rightarrow$ FLT/DAQ session

Reminder: Target Requirements

- 40 MHz while 10^7 sec/year $\Rightarrow$ reliable and save operation, low backgrounds and no spikes to achieve high running efficiency

- i.a. equally distributed on all wires

- constant rate only small fluctuations, similar contributions from all bunches

$\Rightarrow$ efficient monitoring is required:

- challenge (problem) - highly selective trigger: > 6 orders of magnitude (B's on tape in sub Hz region). I.e. from farm output one will not learn much about initial rate behaviour.

- ideal case: to know for each bx the number of interactions, the wire on which they took place and the number of background tracks

- real experiment - capability is rather limited, shouldaim and work for an efficient monitoring:

  global rates with high precission

  bx-bx variations and fluctuations in time

  distribution on wires

  timing of interactions, ...

What do we provide

- rough independent rate determination $\mathcal{O}(10\%)$, time integrated measurement of individual wire contribution, monitoring of background (p and e)
- external info (HERA, ZEUS, ...) as in 1997
- Emergency/Interlock System with HERA: ok to move wires, emergency retraction by HERA, beam dump interlock by HERA-B, ...?
- fluctuation monitoring and timing monitoring (40 MHz FADC and $\mathcal{O}$(GHz) FADC)
- part of interfaces to pretrigger and SLT (subject of further consideration) and maintenance of monitoring
- distribution of information: DB (and sharc to SLB ?)