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February 13, 2002

Polarimeter meeting

HERA transverse polarimeter Online DAQ: status report

- Overview
- Performance and first tests
- User interface
  - Monitor
  - Run control, Auto-pilot

Overview

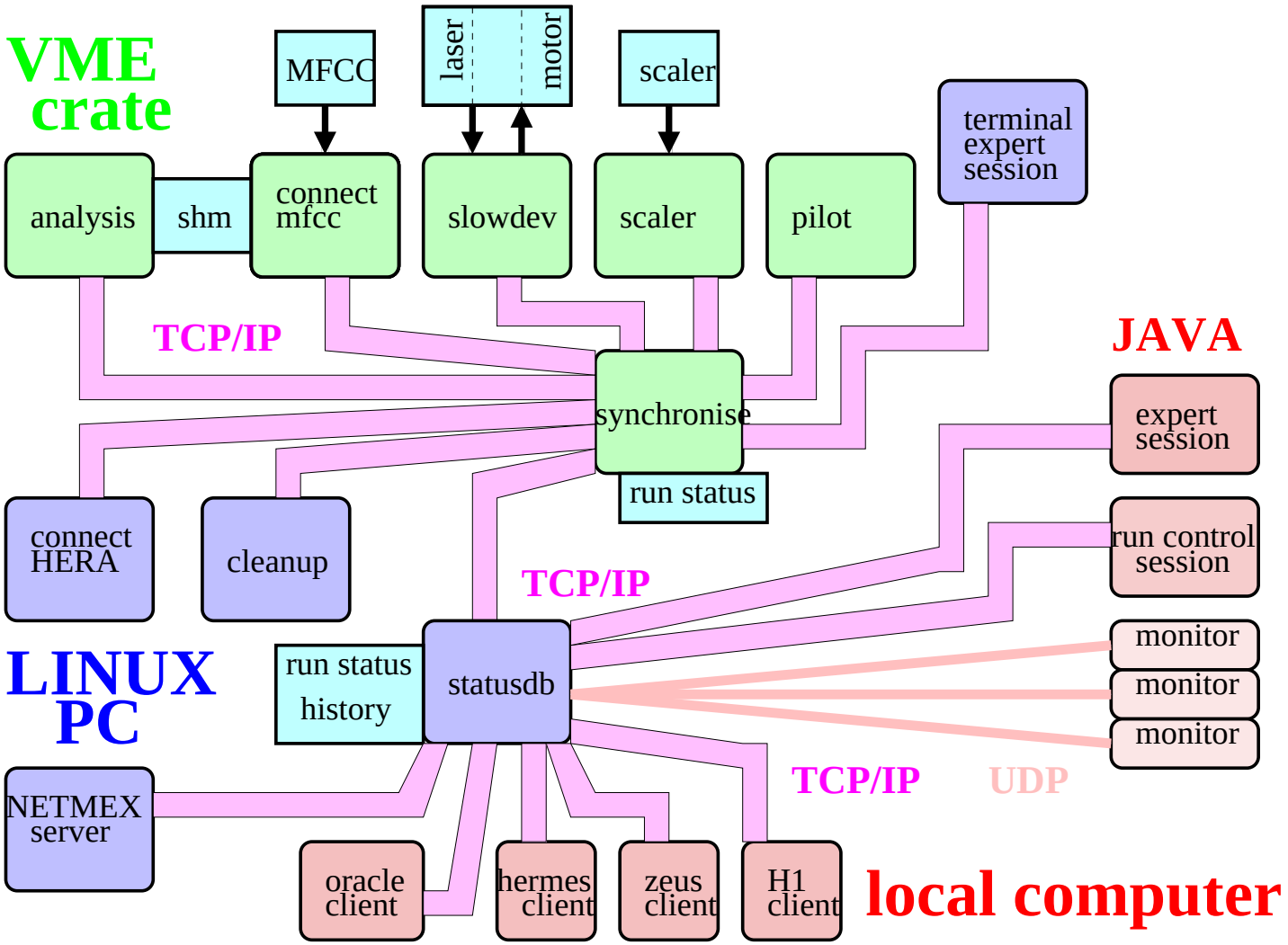
General

- All subcomponents can be controlled remotely
- DAQ programs are connected by TCP/IP sockets
- Monitoring tasks are connected by UDP sockets

Interface

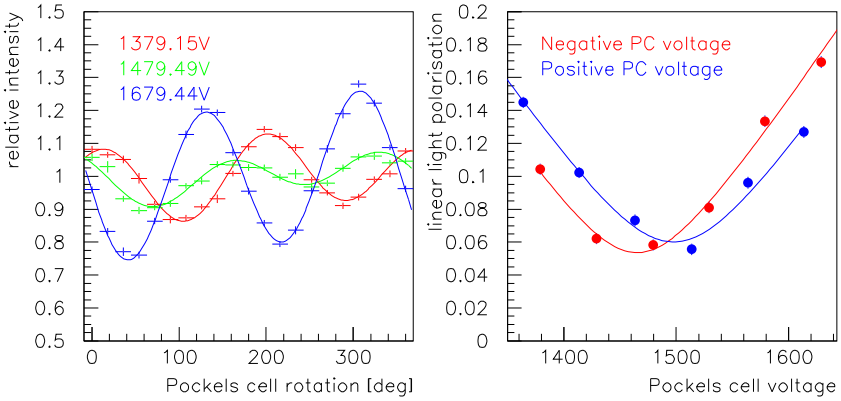
- Java based interface for online monitoring and run-control
- Terminal based interface for "real" experts
- Small online database for most recent history (10 hours), used by the java-tool
- Everything is logged to ORACLE for offline access
- Dedicated clients for the experiments
- NETMEX server

Schematic overview



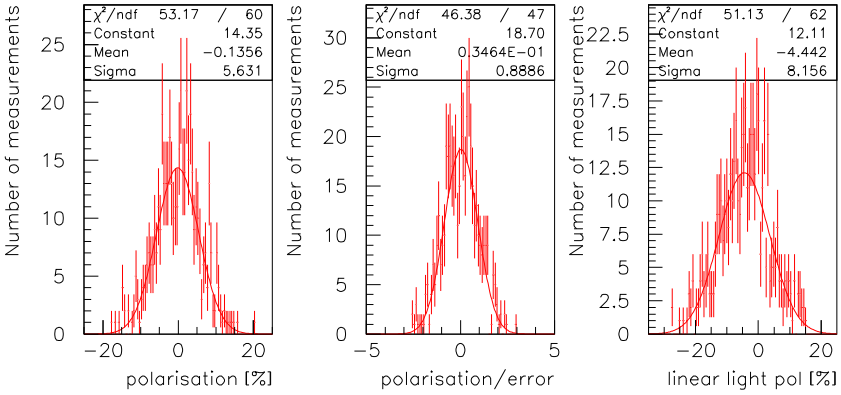
Performance and first tests

- Light polarisation measurements



Slow controls and algorithms work fine

- Tests with low currents in December 2001: online analysis results



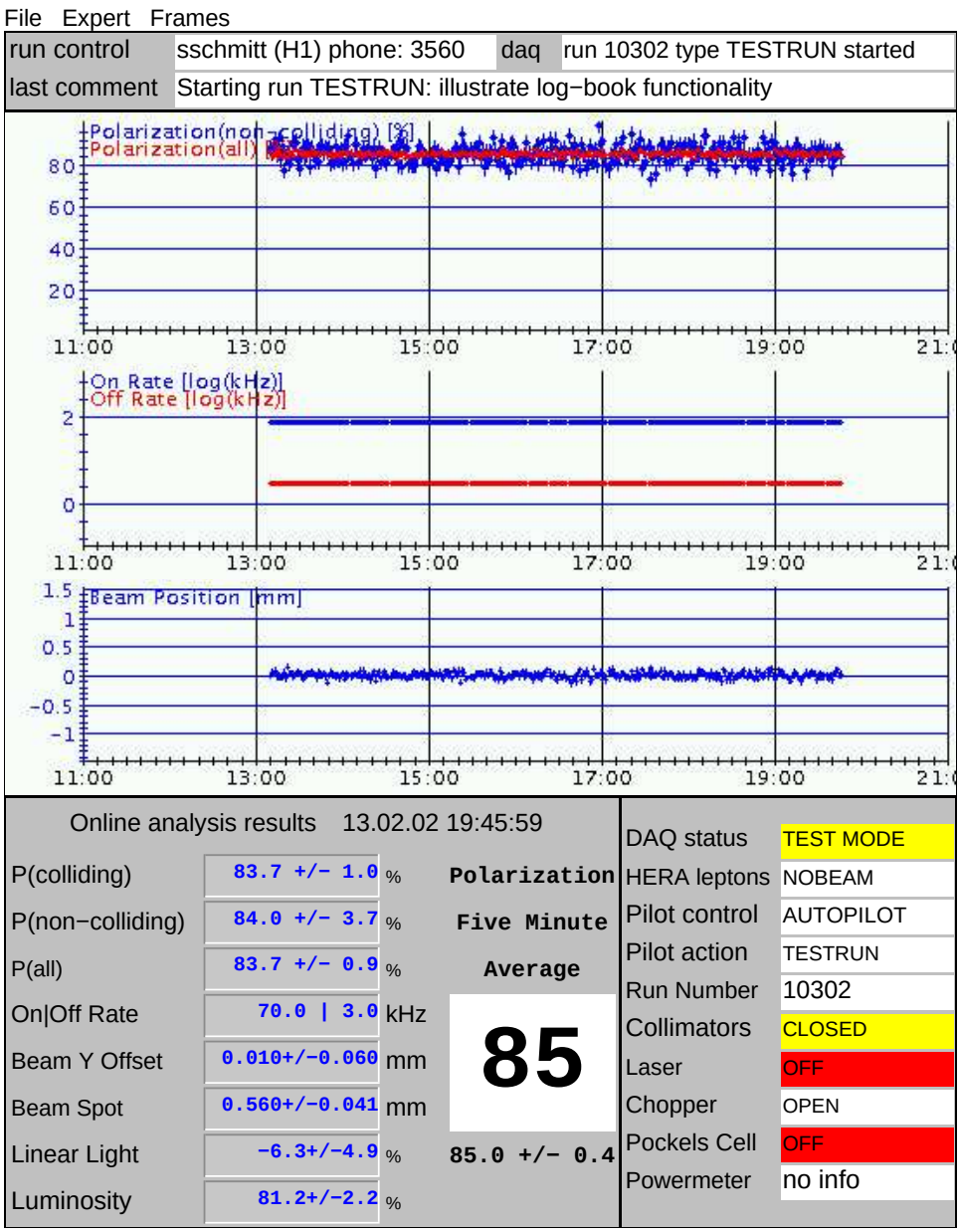
Polarisation is zero → no bias

Light polarisation ≈ direct measurement

- High rate LED tests: 45 KHz and 90 KHz → deadtime negligable

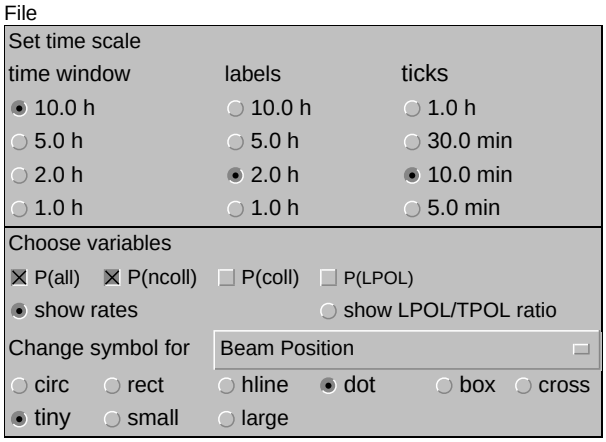
User interface: TPOL monitor

- Written in java → can run on Linux and NT
- See `http://pctpol03.desy.de` for instructions

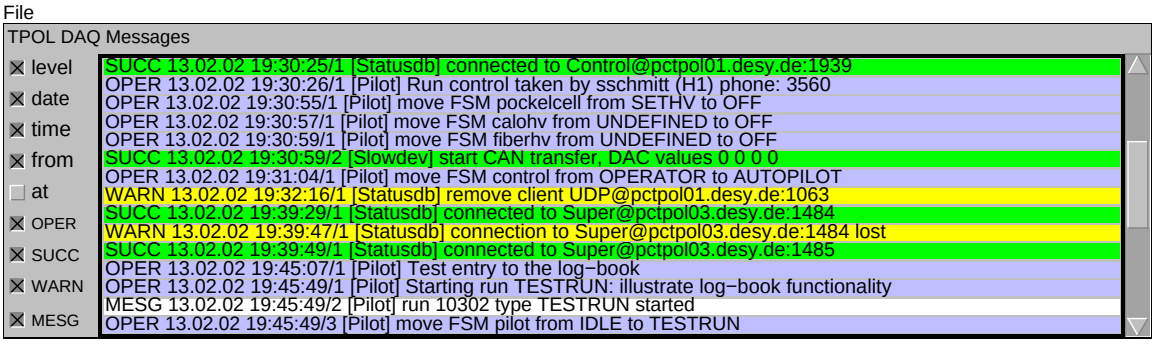


TPOL monitor (continued)

- Program is still improving — update Your copy frequently
- Display and print-jobs can be configured, settings can be saved for the next session

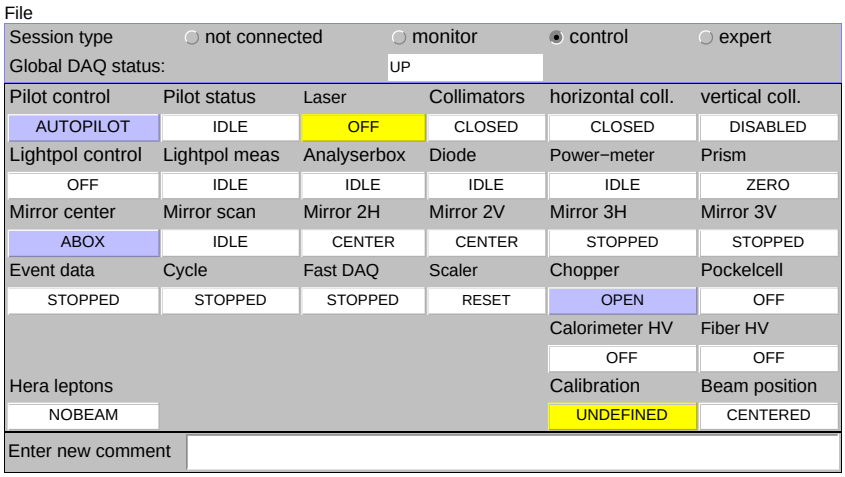


- Electronic log-book to browse recent comments and error messages



Run control, Auto-pilot

- The run control (RC) consists of finite state machines (FSM), represented as buttons with colors, e.g **Chopper**
  OPEN→CLOSING→CLOSED→OPENING→



- The AutoPilot acts on FSMs only, according to a list of rules, e.g

  hera=NOBEAM|INJECTION|RAMP|BEAMDUMP:
  MoveFSM collimators CLOSED
  hera=RUNNING:
  MoveFSM collimators OPEN

  The RC will find that moving the collimators involves the horizontal and/or vertical collimator, etc.

Summary

- New TPOL DAQ is working well
- Individual processes are interconnected by TCP/IP sockets
- Run control based on finite state machines

  → avoid to do things in the wrong order or to bring the DAQ in an undefined status

  → actions can be started/interrupted at any time in a transparent way
- The AutoPilot acts on the finite state machines only (like sitting in front of the run-control panel)
- The TPOL monitor is ready to be used

  — please test it and report bugs/missing features
- **The TPOL is ready for taking data.**