On-line Software for Spin-Filtering Experiments

M. Nekipelov

- **Tasks**
- **Requirements**
- **The problem**

What has to be done?

1) “Physics” monitoring
   - ✓ Beam polarimetry
   - ✓ Beam profile monitor
   - ✓ ΔE/E spectrum (energy calibration)

   } pd-elastic cuts

   - ✓ Count rates (stability check)

2) Hardware monitoring/control
   - ✓ Temperature
   - ✓ High voltage
   - ✓ Currents
   - ✓ Dead-time watch (multi-hit TDC)

3) Failure notification (including target)

Needed for November'07 beam-time

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- ✓ **Beam polarimetry**
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2) **H**

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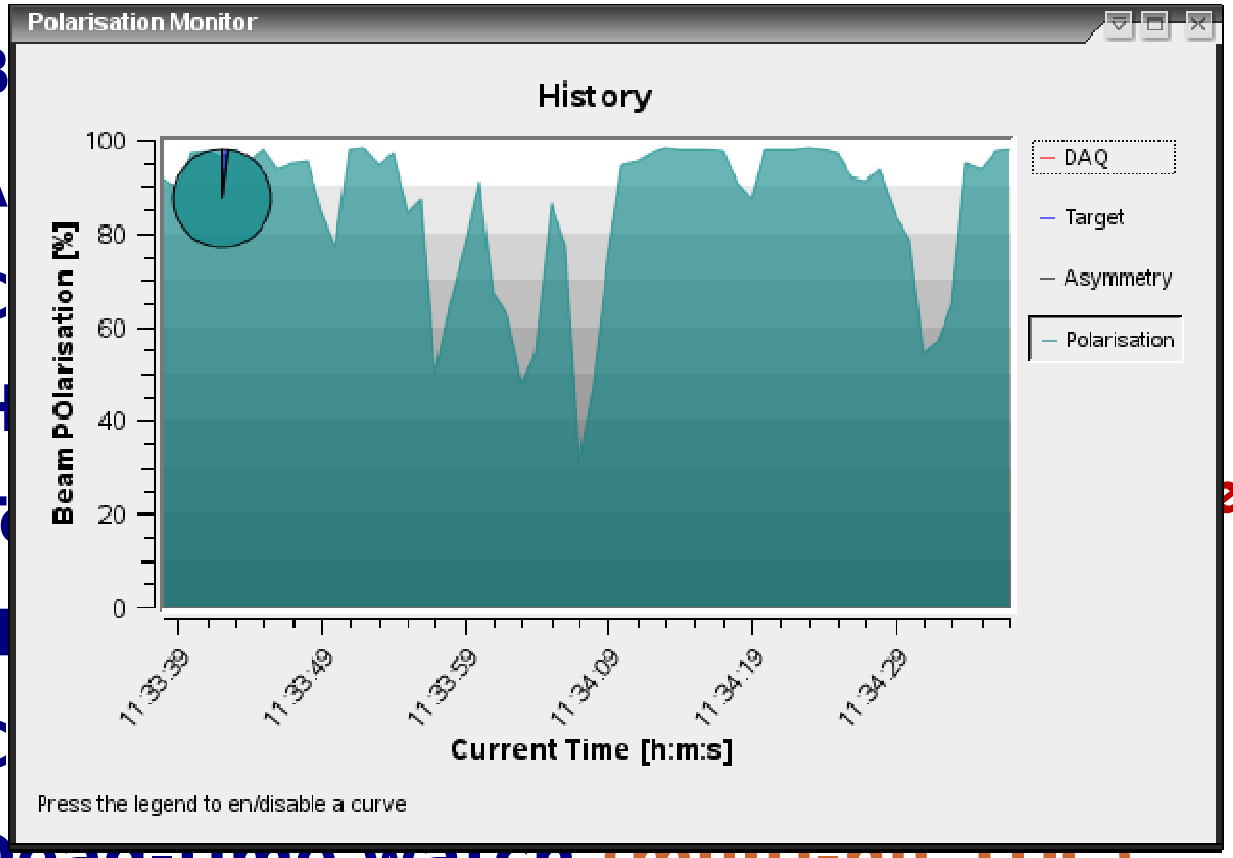
- ✓ **C**
- ✓ **Dead-time watch (multi-hit TDC)**

3) **Failure notification (including target)**



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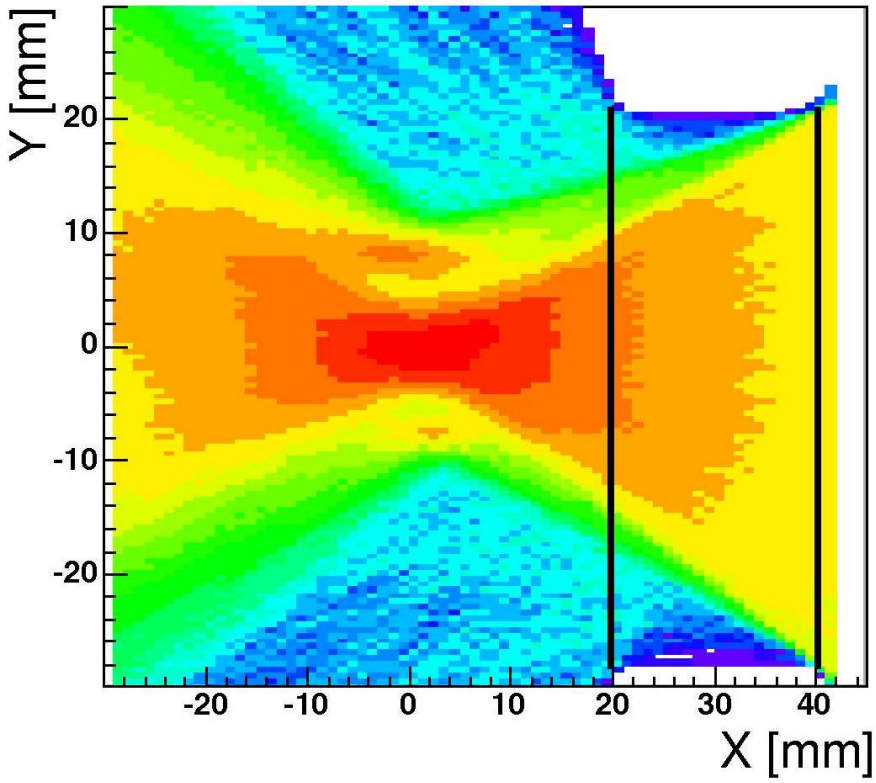

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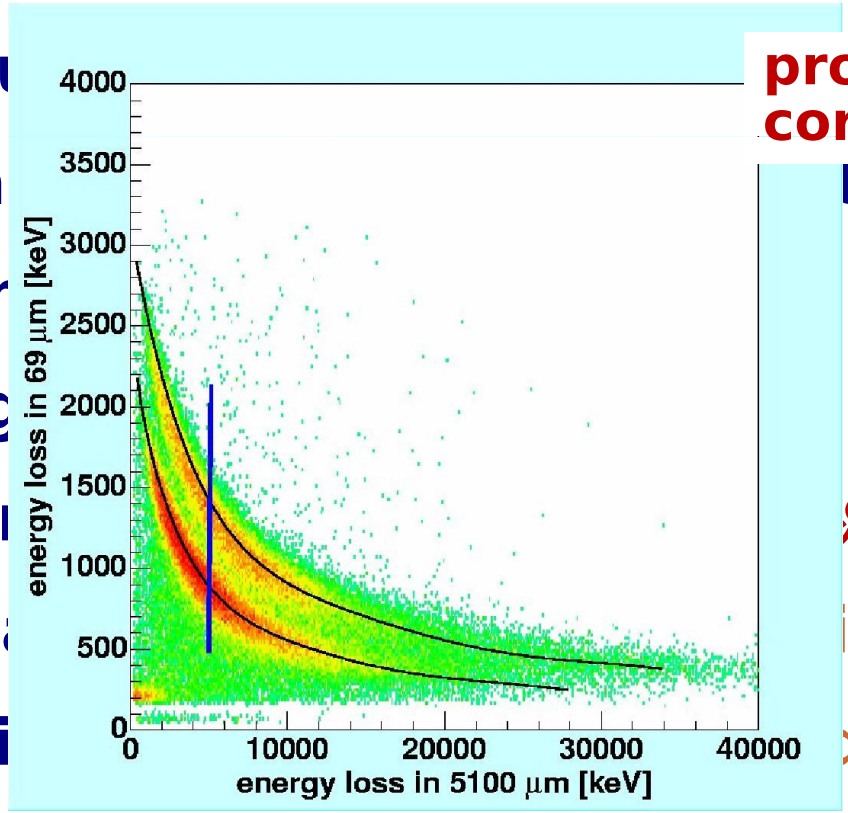

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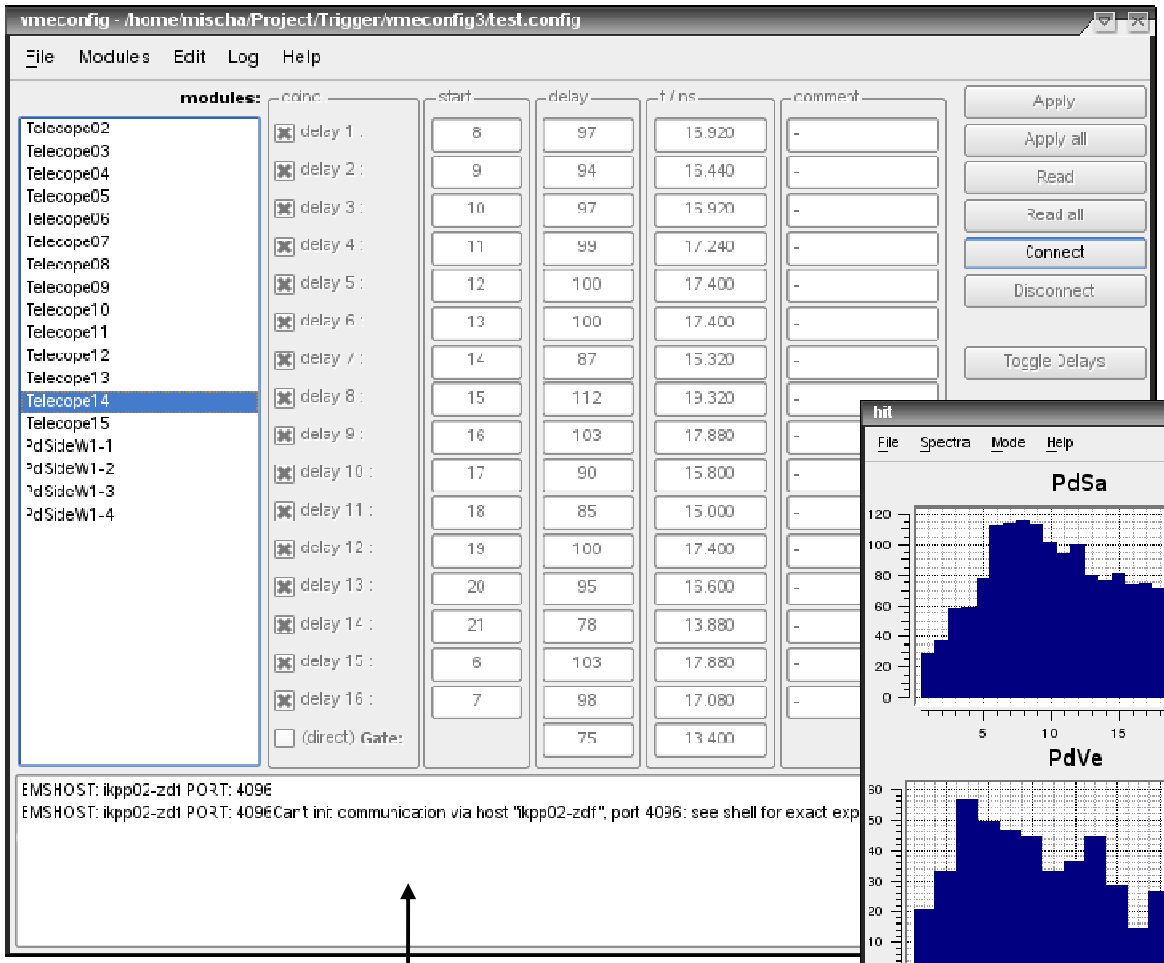
Realisation

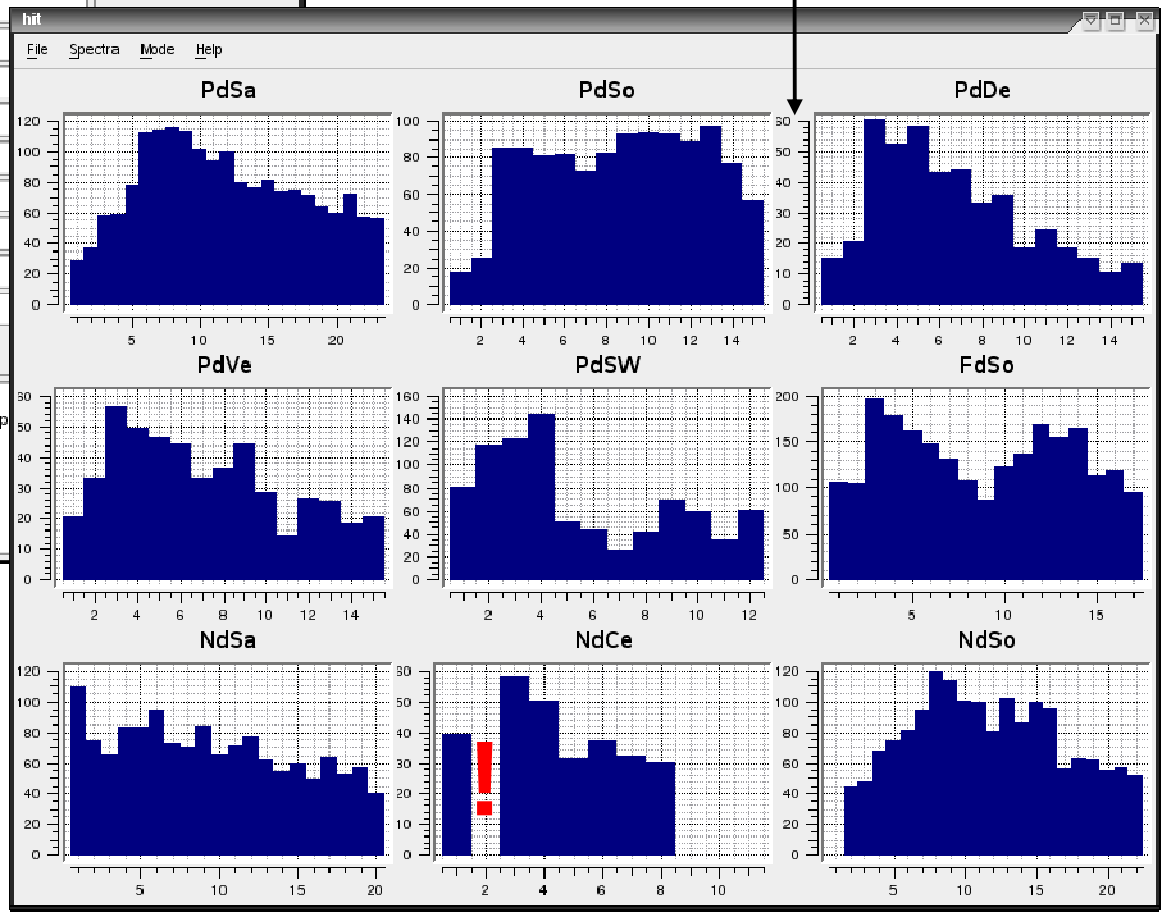
- Code base
  - RootSorter for most of the “physics” tasks
  - little helpful tools – standalone applications
  - GUI – Qt4 based
- Event stream based analysis (physics)
  - 100% of events have to be analysed
- Direct connection to a server (hardware)
  - Server side modifications needed?
- Compatibility with both old and new set-up files

ANKE examples



Hardware control (ANKE TOF trigger)

Event stream analysis & basic error notification



- **Fast analysis**
  - ✓ **Teaching sample**
  - ✓ **Important parameters are stored in histogram(s)**
  - ✓ **Shape difference test**
- **Logging**
- **Calibration data are easily accessible**

} **ASCII/ database?**