

# *On-line Software for Spin-Filtering Experiments*

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

## 1) “Physics” monitoring

- ✓ **Beam polarimetry**
- ✓ **Beam profile monitor**
- ✓  **$\Delta E/E$  spectrum (energy calibration)**
- ✓ **Count rates (stability check)**

pd-elastic cuts

## 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**

## 1) "Physics" monitoring

### ✓ Beam polarimetry

✓ B

✓ Δ

✓ C

## 2) H

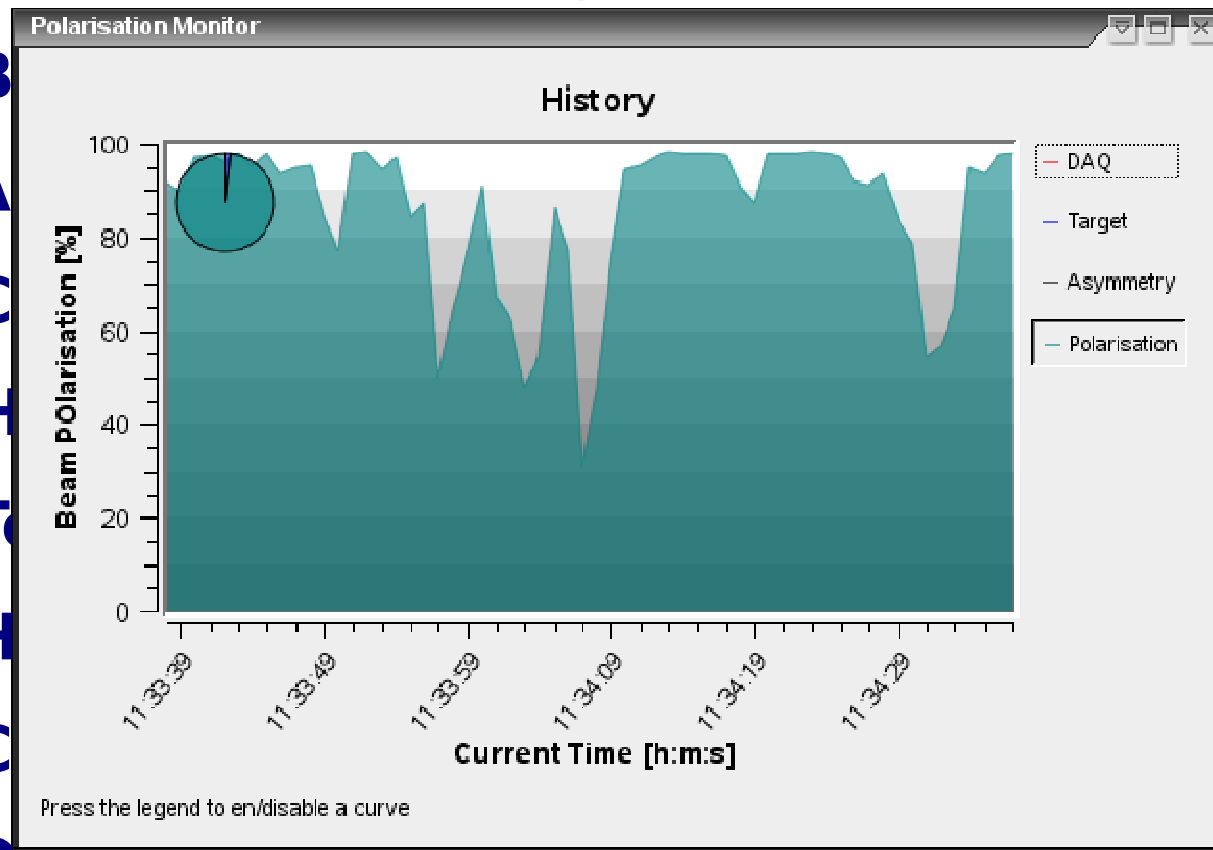
✓ T

✓ H

✓ C

### ✓ Dead-time watch (multi-hit TDC)

## 3) Failure notification (including target)



pd-elastic cuts

September '07 beam-time

## 1) "Physics" monitoring

- ✓ Beam polarimetry
- ✓ Beam profile monitor
- ✓  $\Delta E/E$

✓ Cour

## 2) Hard

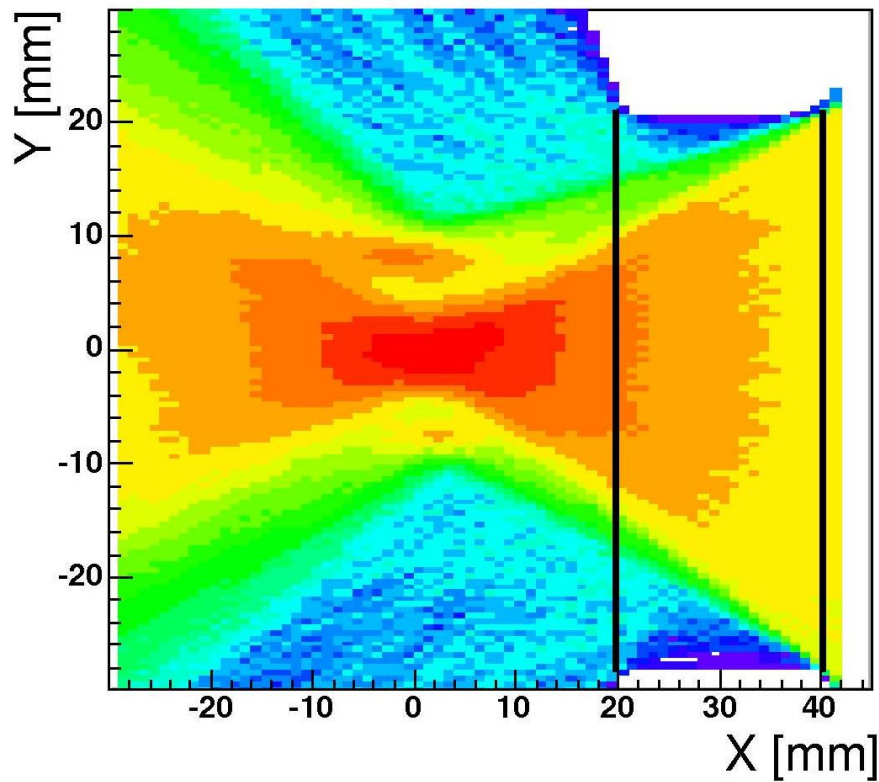
✓ Temp

✓ High

✓ Curri

✓ Deac

## 3) Failu



i) } pd-elastic cuts

November'07 beam-time

get)

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pd-elastic cuts

## 2) Ha

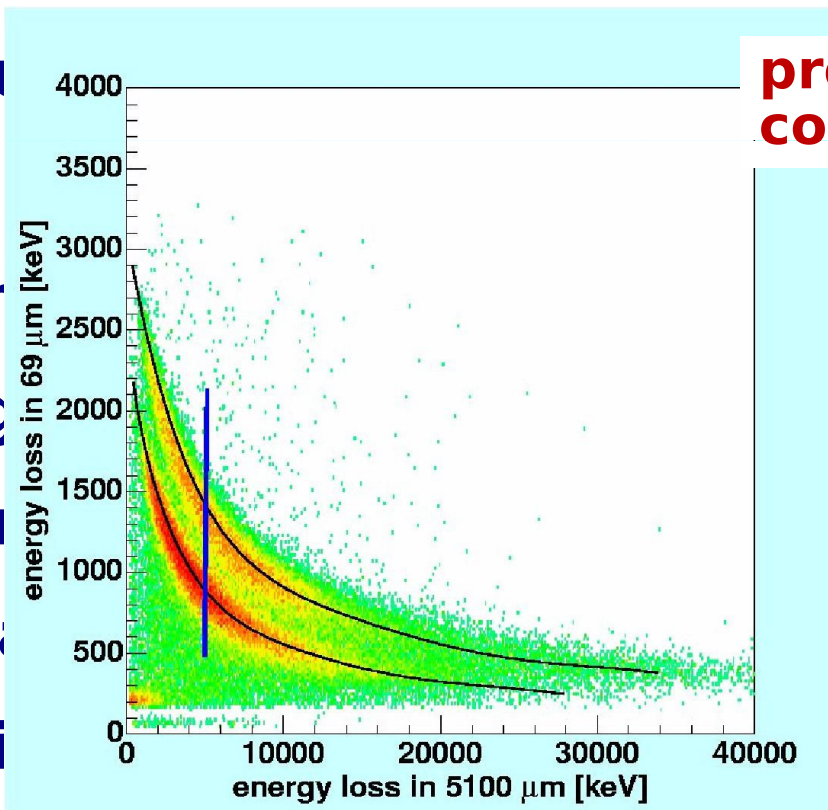
## Ter

## High

## Cul

## De

## 3) Fai



provided common mode correction works

needed for November

(at TDC)

hitting target)

beam-time

## 1) “Physics” monitoring

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pd-elastic cuts

## 2) Hardware monitoring/control

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## 3) Failure notification (including target)

**Needed for November'07 beam-time**

- **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**

vmeconfig - /home/mischa/Project/Trigger/vmeconfig3/test.config

File Modules Edit Log Help

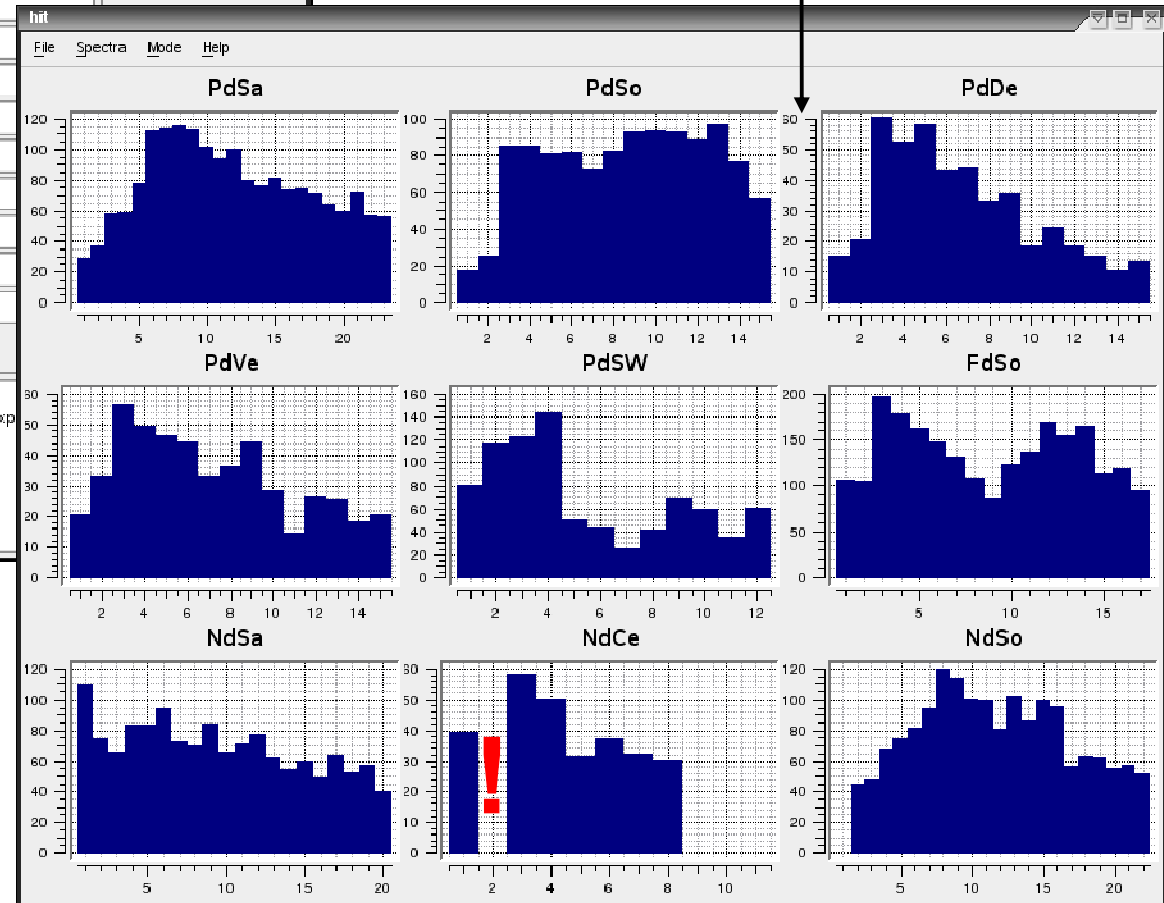
modules:

name	start	delay	t / ns	comment	
Telescope02	delay 1 :	8	97	15.920	-
Telescope03	delay 2 :	9	94	15.440	-
Telescope04	delay 3 :	10	97	15.920	-
Telescope05	delay 4 :	11	99	17.240	-
Telescope06	delay 5 :	12	100	17.400	-
Telescope07	delay 6 :	13	100	17.400	-
Telescope08	delay 7 :	14	87	15.320	-
Telescope09	delay 8 :	15	112	19.320	-
Telescope10	delay 9 :	16	103	17.880	-
Telescope11	delay 10 :	17	90	15.800	-
Telescope12	delay 11 :	18	85	15.000	-
Telescope13	delay 12 :	19	100	17.400	-
Telescope14	delay 13 :	20	95	15.600	-
Telescope15	delay 14 :	21	78	13.880	-
PdSideW1-1	delay 15 :	6	103	17.880	-
PdSideW1-2	delay 16 :	7	98	17.080	-
PdSideW1-3	(direct) Gate:	75	13.400	-	

Apply  
Apply all  
Read  
Read all  
Connect  
Disconnect  
Toggle Delays

EMSHOST: ikpp02-zd1 PORT: 4096  
EMSHOST: ikpp02-zd1 PORT: 4096Cart init communication via host "ikpp02-zdf", port 4096: see shell for exact exp

## Event stream analysis & basic error notification



Hardware control  
(ANKE TOF trigger)



→ **Fast analysis**

✓ **Teaching sample**

✓ **Important parameters are stored in histogram(s)**

✓ **Shape difference test**

→ **Logging**

→ **Calibration data are easily accessible**

} **ASCII/  
database?**