

Preparations for the run start

Polarimeter status

- Introduction
- LPOL status
- TPOL status

Introduction

- two polarimeters, TPOL and LPOL
- TPOL measures transverse polarization near HERA-b (WR133)

Note: no spin-rotators near HERA-b $\rightarrow$

$$\mathcal{P}_L = 0, \mathcal{P}_T = |\mathcal{P}|$$

- LPOL measures longitudinal polarization between HERMES spin rotators

Note: between spin-rotators $\rightarrow$

$$\mathcal{P}_T = 0, \mathcal{P}_L = |\mathcal{P}|$$

$\rightarrow$ both polarimeters measure the same number but have different systematic uncertainties.

$\rightarrow$ store both measurements with the H1 data

LPOL

- Detector unchanged, first tests to shoot laser on the electron beam were successful and data looked ok

→ LPOL is ready to take data

LPOL will be operated by HERMES

- **Access the online LPOL data by NETMEX. I suggest to store at least the following data:**

HXLonPol	Longitudinal Polarization
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one minute average

HXBunPol	Single bunch Polarization
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five minute average

HXRunNum	HERMES run number
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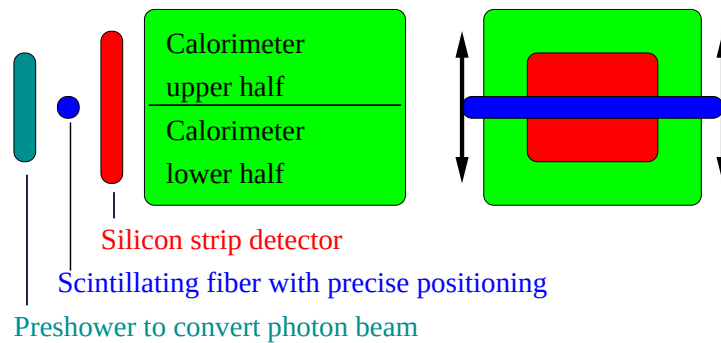
(link to the raw LPOL data!)

TPOL

Two major upgrades during the shutdown

- completely new DAQ system
 - works with higher trigger rates and can resolve single bunches
- Spare Compton beam calorimeter is upgraded with a preshower ($1X_0$) and a silicon detector
 - online verification of the calibration

Use Compton beam as “test-beam”



TPOL DAQ upgrade status

- DAQ Upgrade is complete. TPOL still has to be operated manually, until all automatic algorithms are implemented. Basic algorithms to steer the LASER-beam, calibrate the calorimeter channels, etc. are ready and have been tested
- Calorimeters: the “original” and the “spare” calorimeter with preshower have both been tested recently in the tunnel.

Testbeam-data (6 GeV ... 50 GeV) has been taken with the “spare”

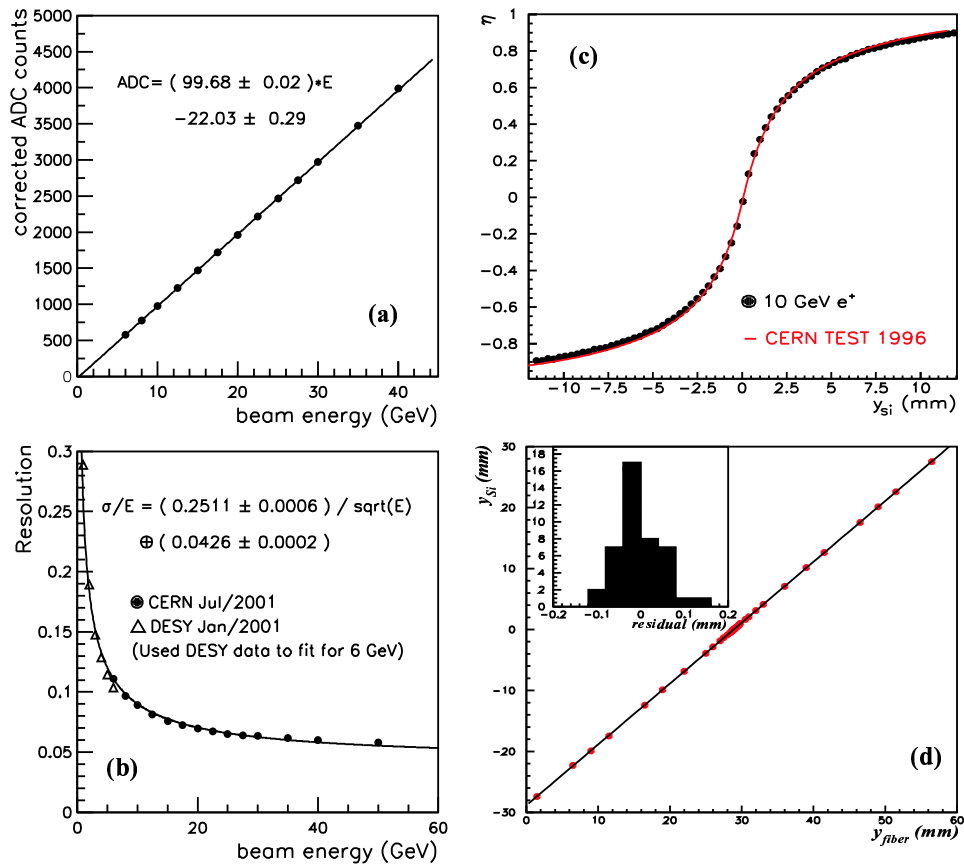
calorimeter+preshower+silicon at CERN

→ calibration of the polarization measurement with preshower is ready

Ready for Polarization measurements, but experts are still needed for operation

CERN testbeam results

TPOL CERN Test 2001 Preliminary Results



Small effects on the position resolution of the calorimeter from preshower $\rightarrow$ taken into account for the $\mathcal{P}$ measurement

TPOL detector upgrade status

- Silicon detector is currently being assembled in front of the “spare” TPOL calorimeter.
- “spare” calorimeter will be installed as the default detector after the shutdown next week

Access to TPOL online data

- A skeleton client is available which has access to all online data from the TPOL, e.g. per-minute polarization for each bunch ($\approx 20\%$ error $\rightarrow 1\%$ on lumi-weighted avg.)
 $\rightarrow$ customize this program to extract the TPOL information and write it into the H1 data stream
- A reduced set of numbers will be put to NETMEX, similar to the LPOL numbers
 $\rightarrow$ mainly to be used by MPY to tune/monitor polarization

Summary and concluding remarks

- Both polarimeters are ready for data taking
- LPOL remains unchanged
- TPOL with new DAQ and new detector, operation by experts, until automatic routine operation is established
- Add LPOL and TPOL online numbers to the H1 data stream
...they might be helpful to get first data-analyzes going
- Offline access to LPOL data: talk to HERMES. Store HERMES run-number with our data to simplify access!
- Offline access to TPOL data: get offline-numbers from ORACLE (J. Böhme) or re-analyze the raw data (work in progress)