TPC Status Report from Hamburg

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TPC Phone Meeting
July 21, 2004

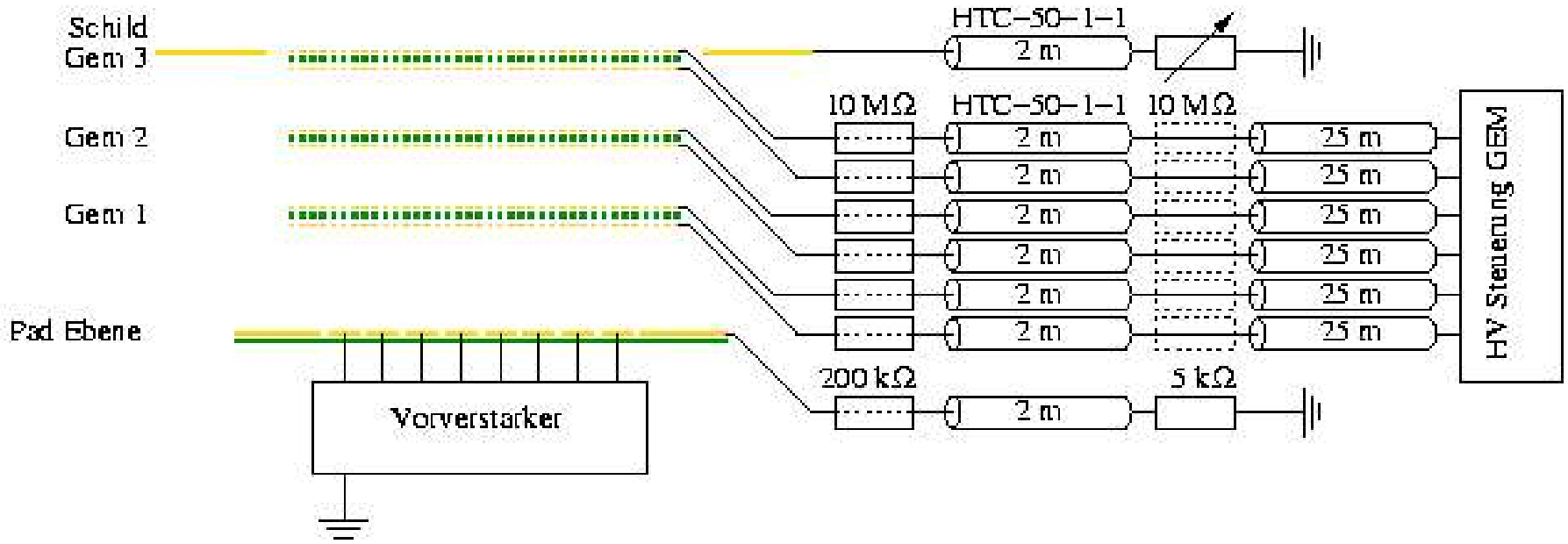
Measurements in 5 T Magnet

- During spring 2004
- Spatial resolution vs. B
- First data presented during LCWS in Paris
- Detailed analysis still ongoing
- Frequent GEM problems delayed data taking

Changed HV Setup

Constant GEM HV problems lead to modification of HV setup:

Protection resistors moved 2 m towards TPC

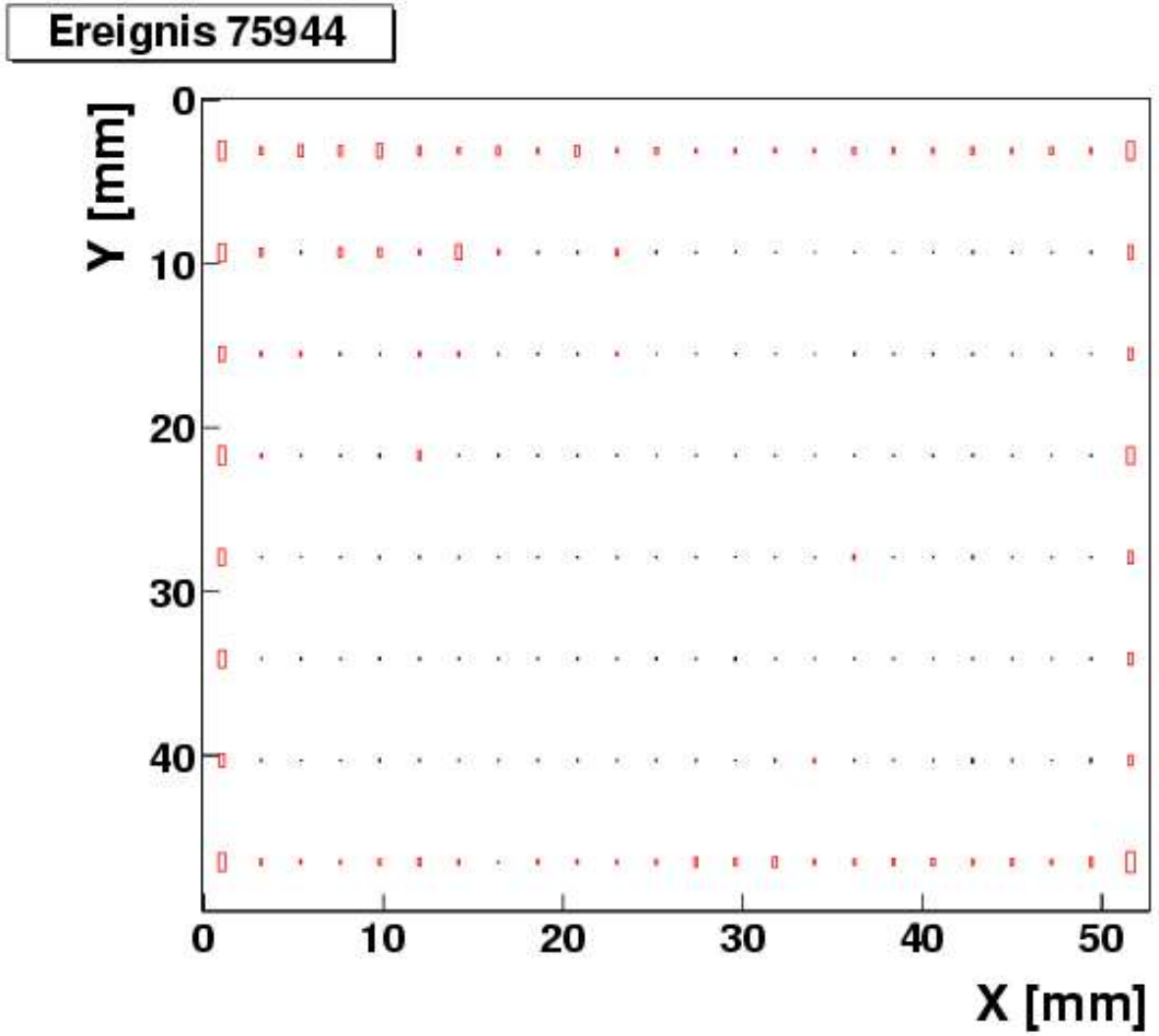


Problem disappeared after modification

Outer Pads

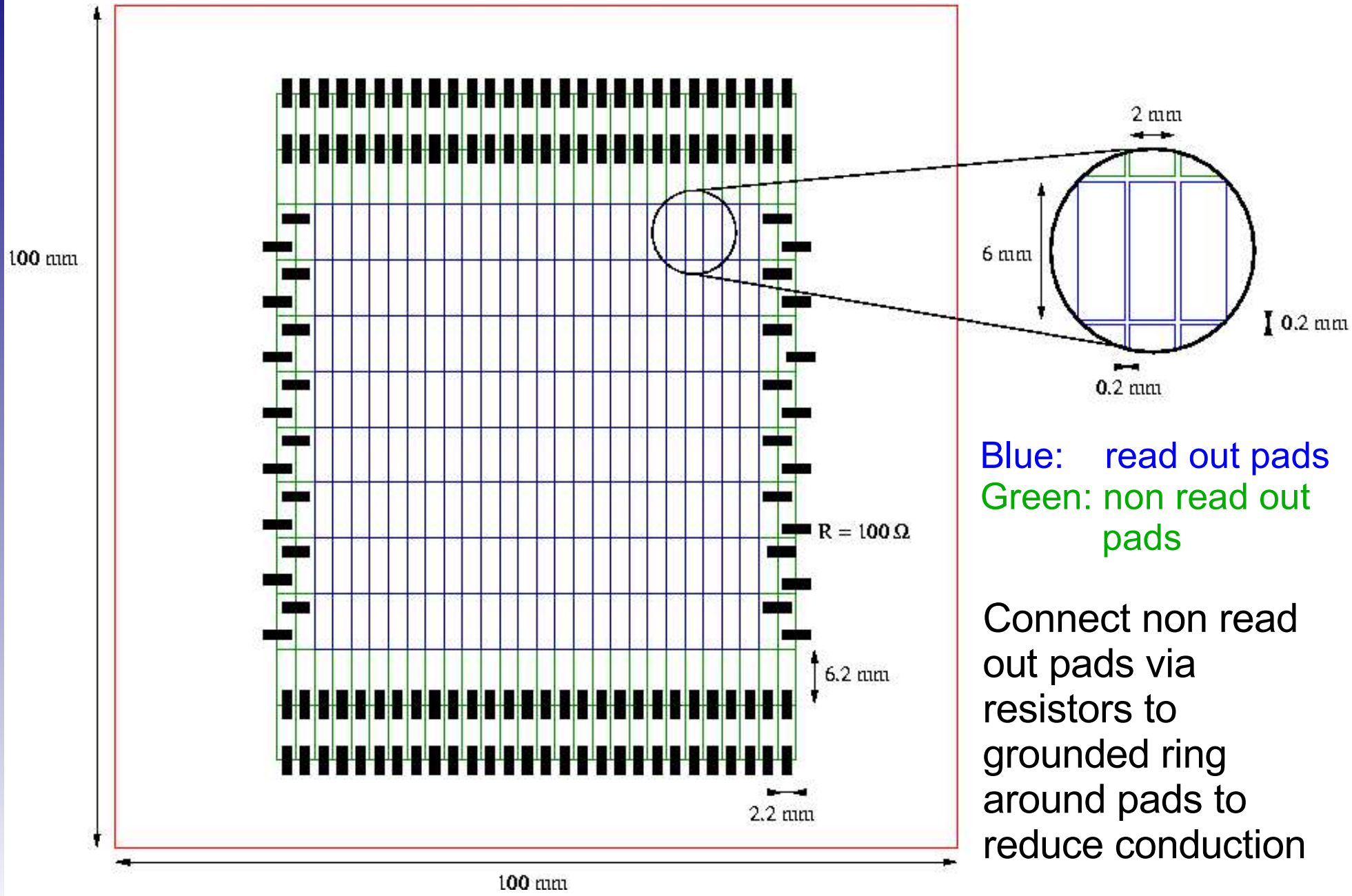
Blemish found in data:

"Hot" pads on outside rows/columns



Red pads = above threshold

Outer Pad Connections

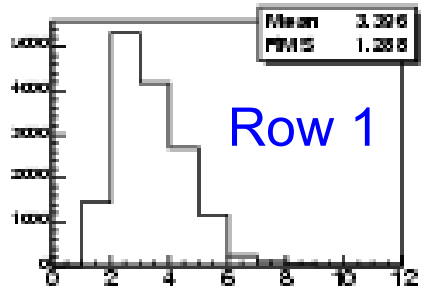


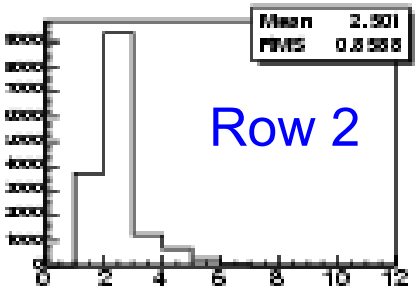
Blue: read out pads
Green: non read out pads

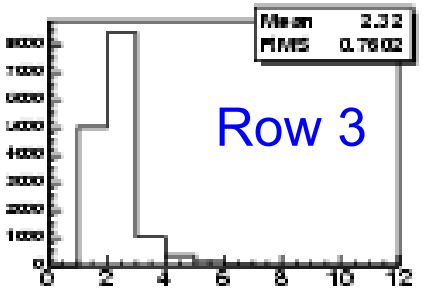
Connect non read out pads via resistors to grounded ring around pads to reduce conduction

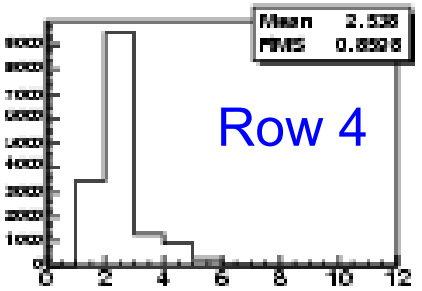
Outer Pads

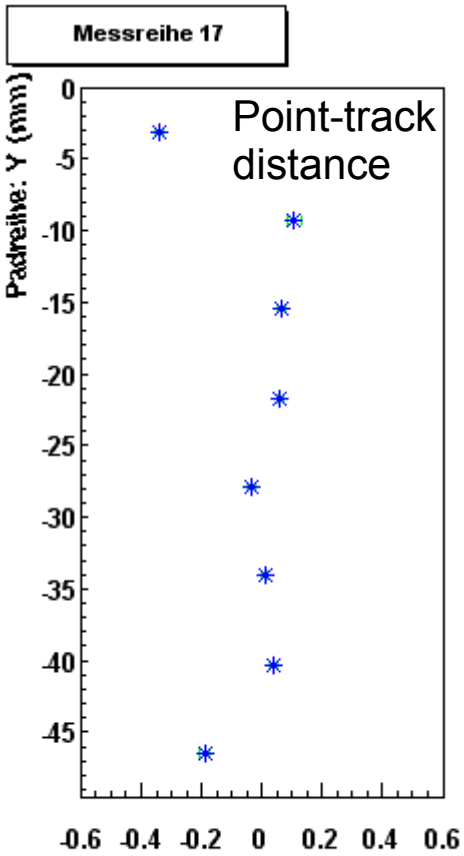
Number of pads contributing to a reconstructed point:

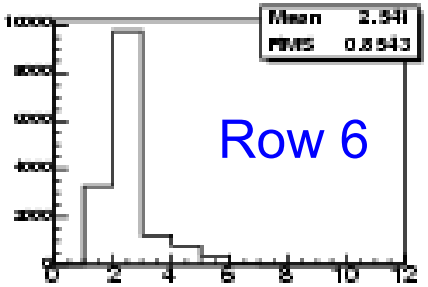


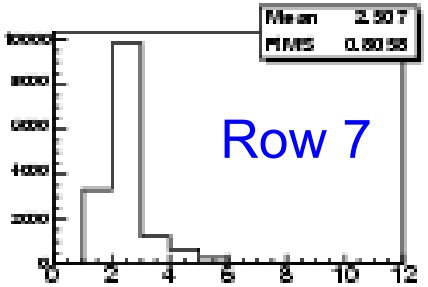


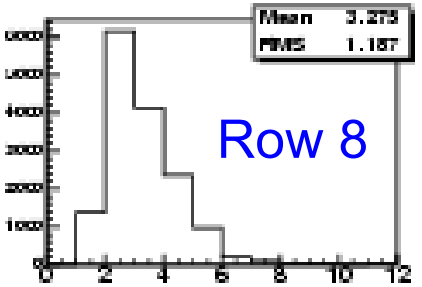






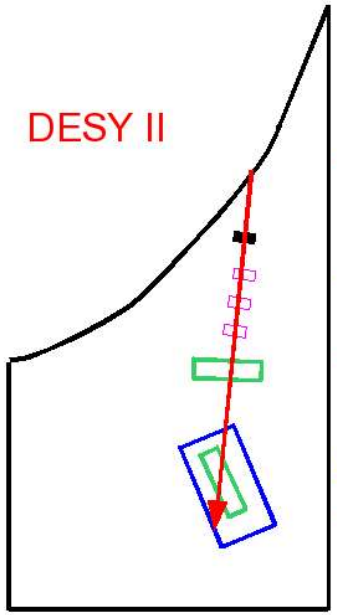






Pad area should be at least as large as amplification area to avoid induction of signals on pads from the surrounding area

e^- Test Beam @ DESY



1-6 GeV Electron Beam

Optional Target

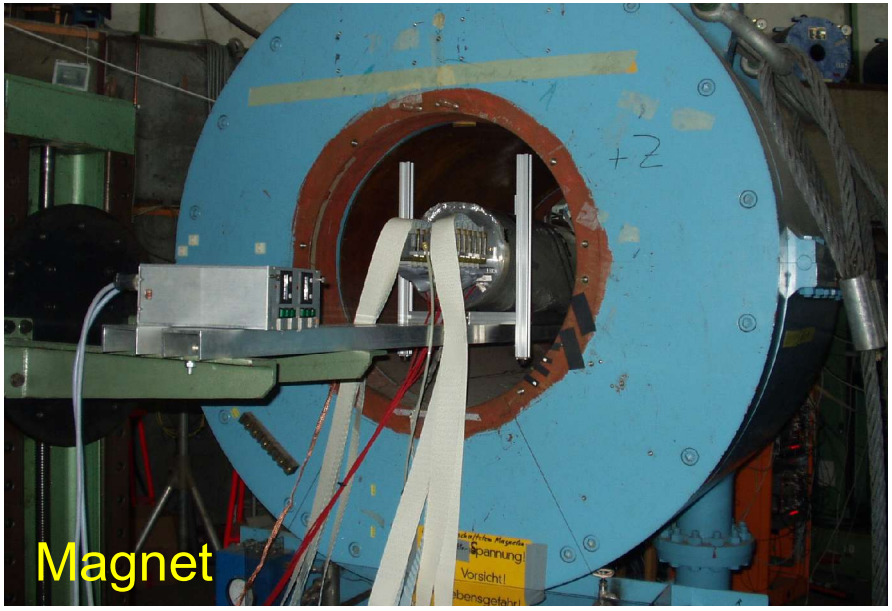
Three Layer Beam Telescope

TPC (Position 2)

0.5 T Magnet

TPC (Position 1)

Test Beam Area 22



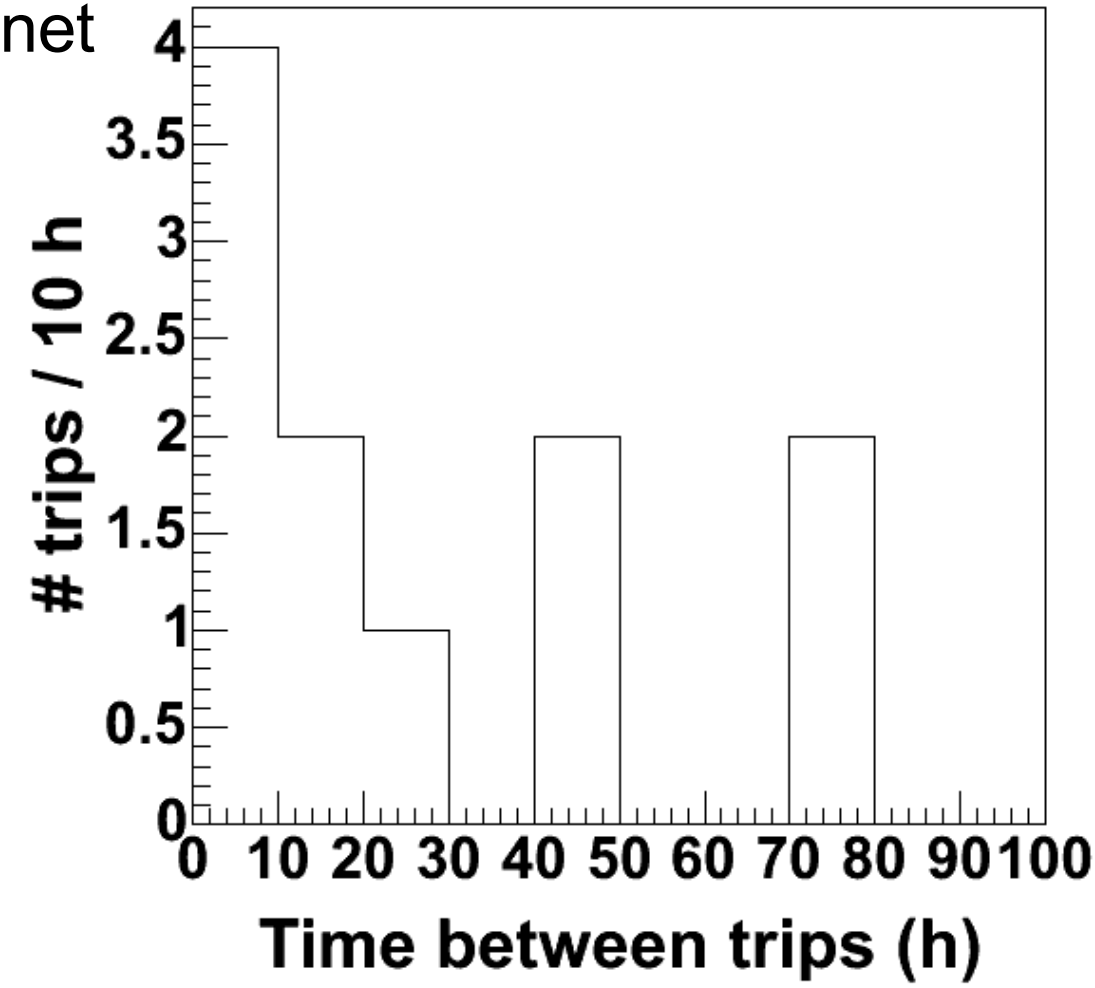
Data taking during May/June

GEM Performance

Lots of trouble @ 5 T magnet

(destroyed half a dozen of GEMs in a few weeks)

Changed location of some protection resistors



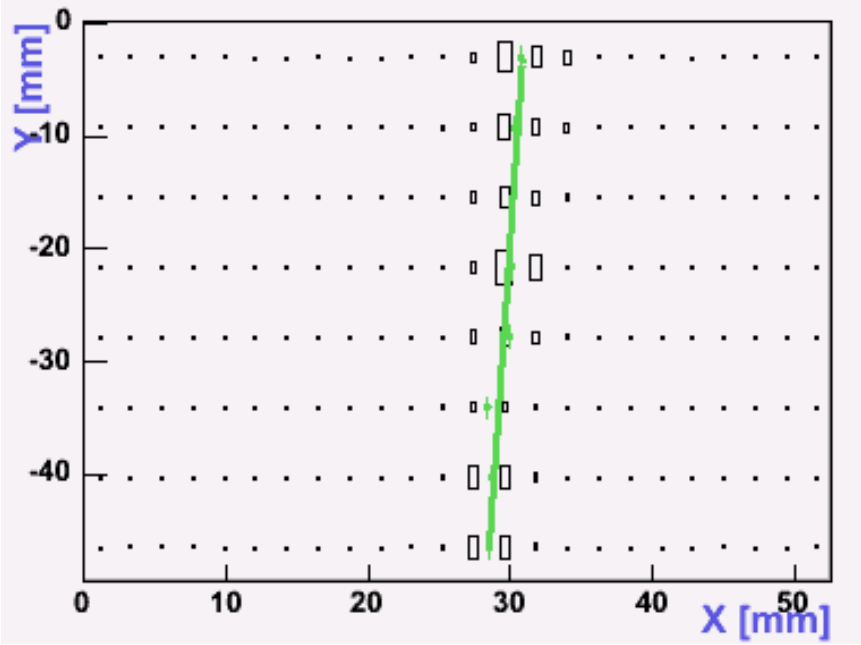
At test beam:

11 trips during 14 days of data taking

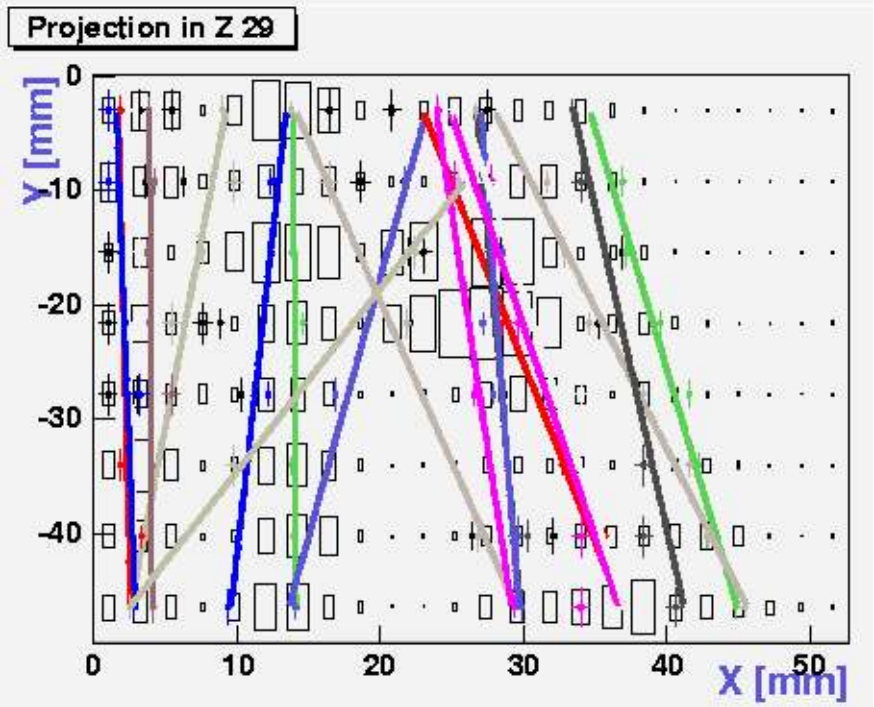
Good GEM performance under test beam conditions

Test Beam Data

Without target:



With Pb target in beamline:



Cluster and track finder must be improved to cope with high track density environments

Data analysis has just started

Summary and Outlook

- Successful data taking in magnet
- Data taking in e^- test beam @ DESY just finished
- Data analysis still in progress
- New results from both magnetic field and test beam runs will be presented during the ECFA workshop in Durham
- Scheduled magnet run with staggered pads in September/October 2004