

Status at GSI

- C. Schwarz



Sept.
2013



Heck laboratory DIRC group

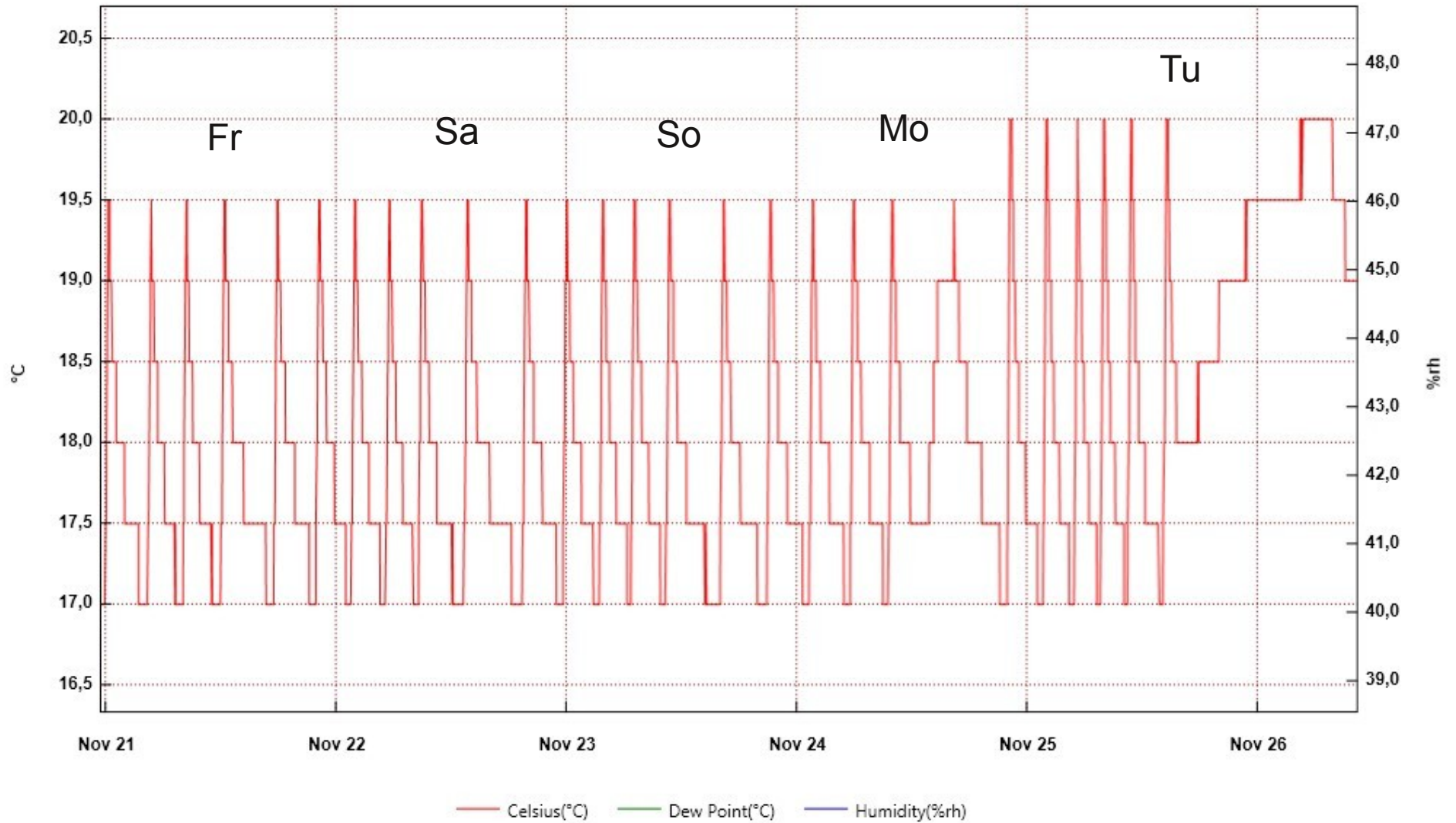
- Electronic lab
- Optics lab
(no windows)
- Mechanics lab



Moved from main campus

Optics lab, air condition

Carstens Logge



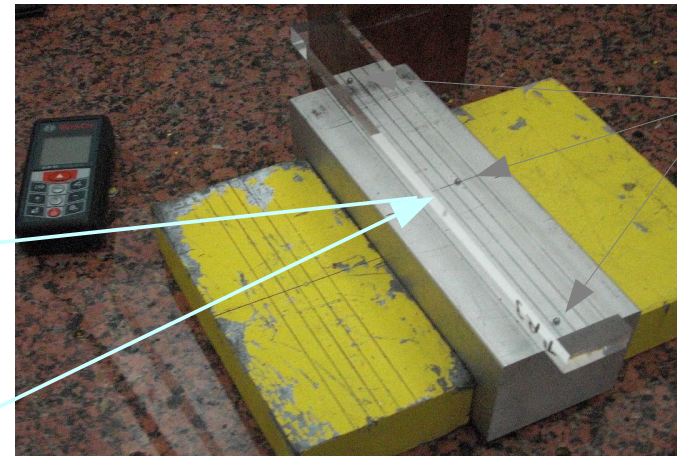
From: Donnerstag, 20. November 2014 23:24:18 - To: Mittwoch, 26. November 2014 10:31:21

Specs: +/- 1 degree

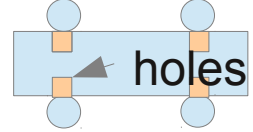
Measurements of bar Parallelism Squareness

Old measurements limited by
bar suspension

8.127m

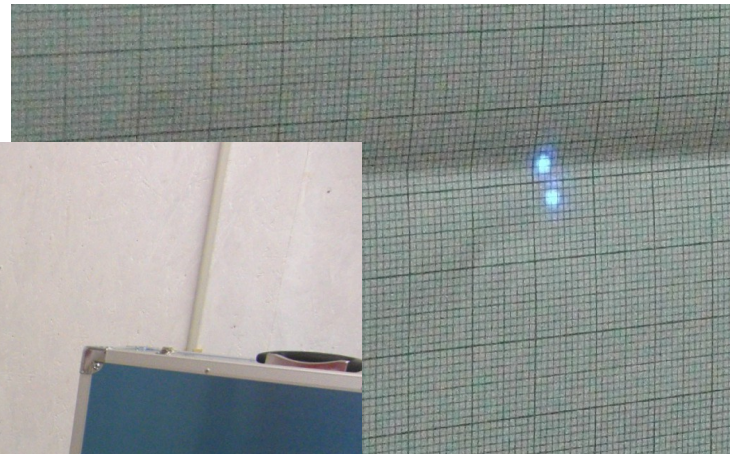
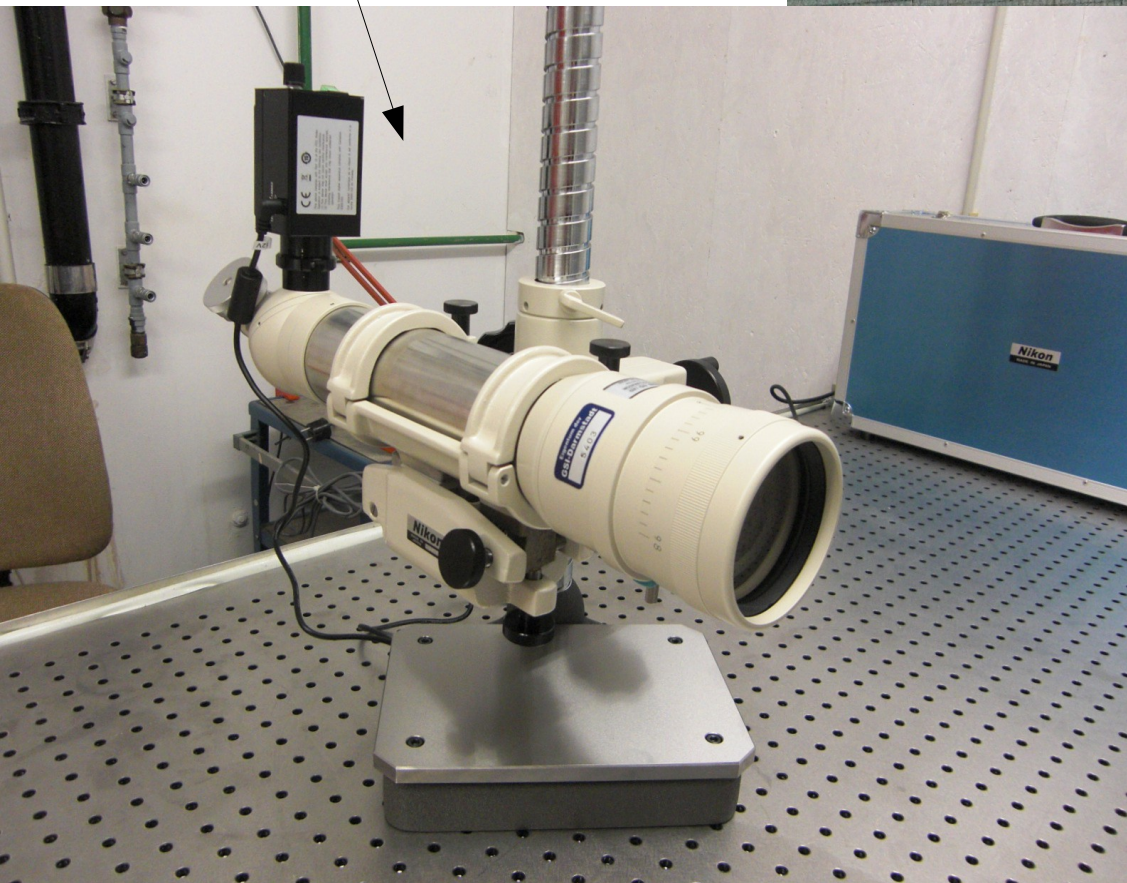


Balls on top



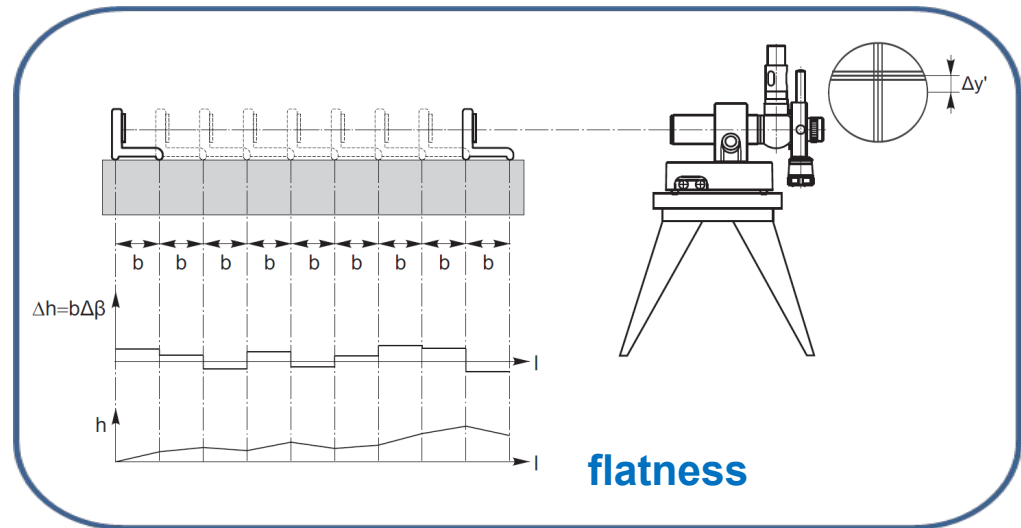
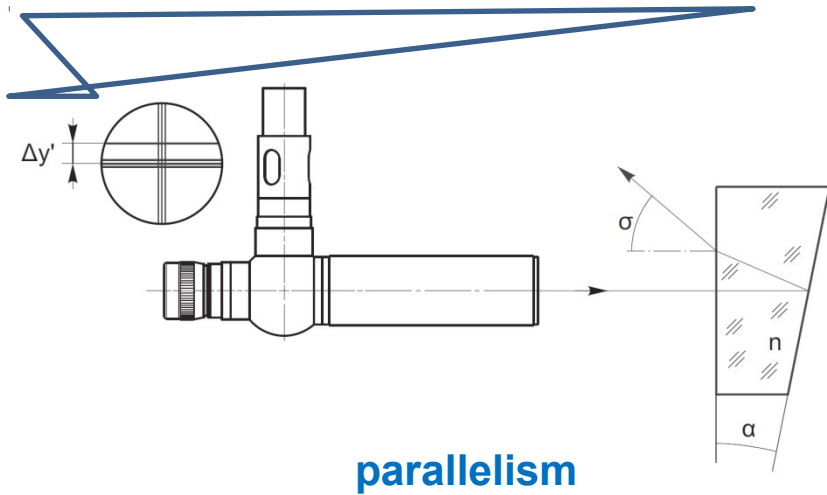
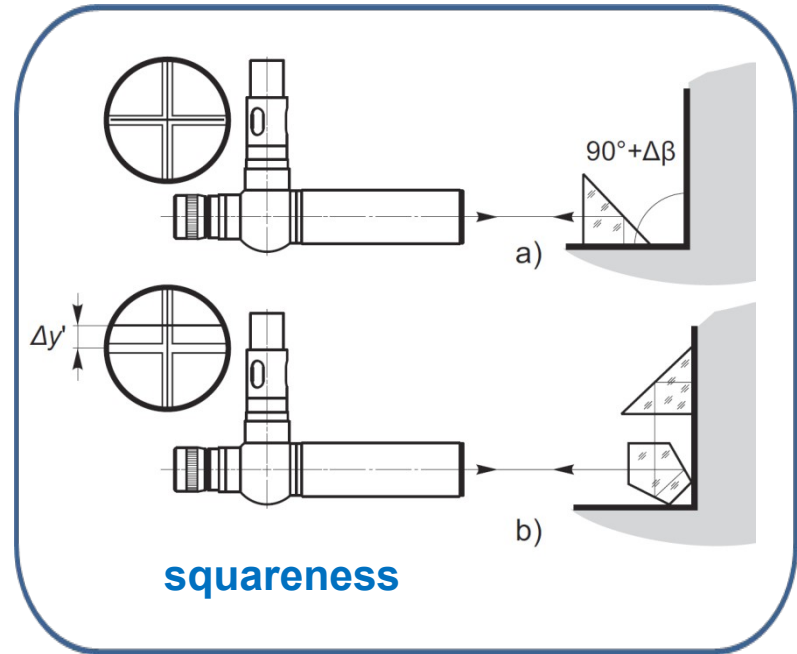
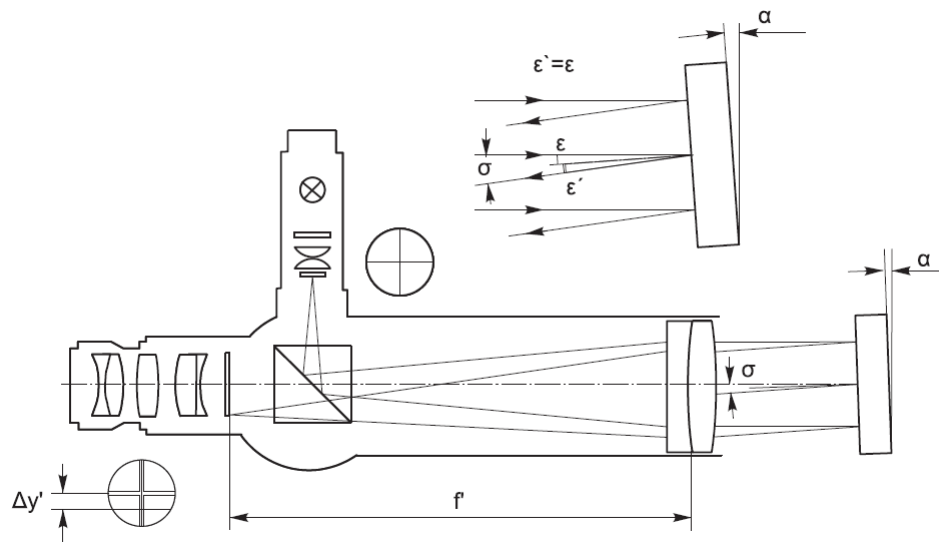
And bottom

New measurements with
Autocollimator prepared



Laser laboratory
on main campus

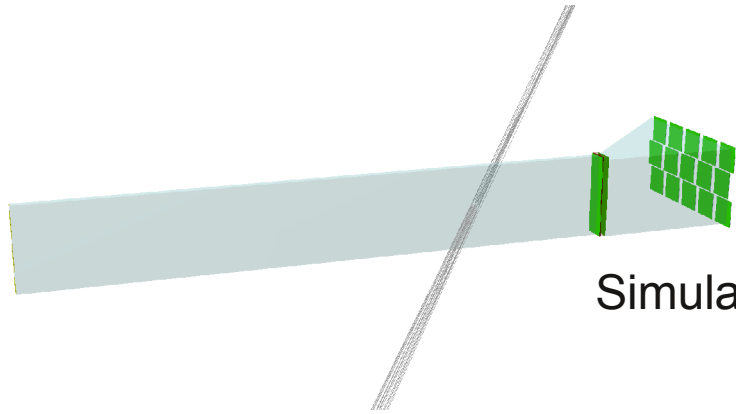
Quality Control: Autocollimator



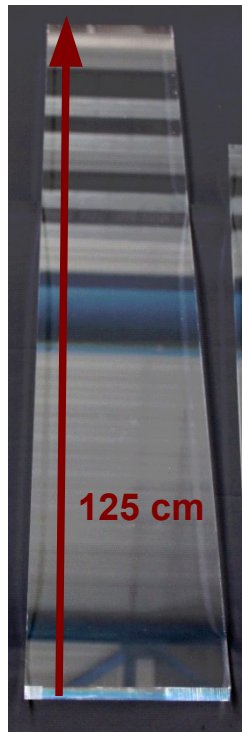
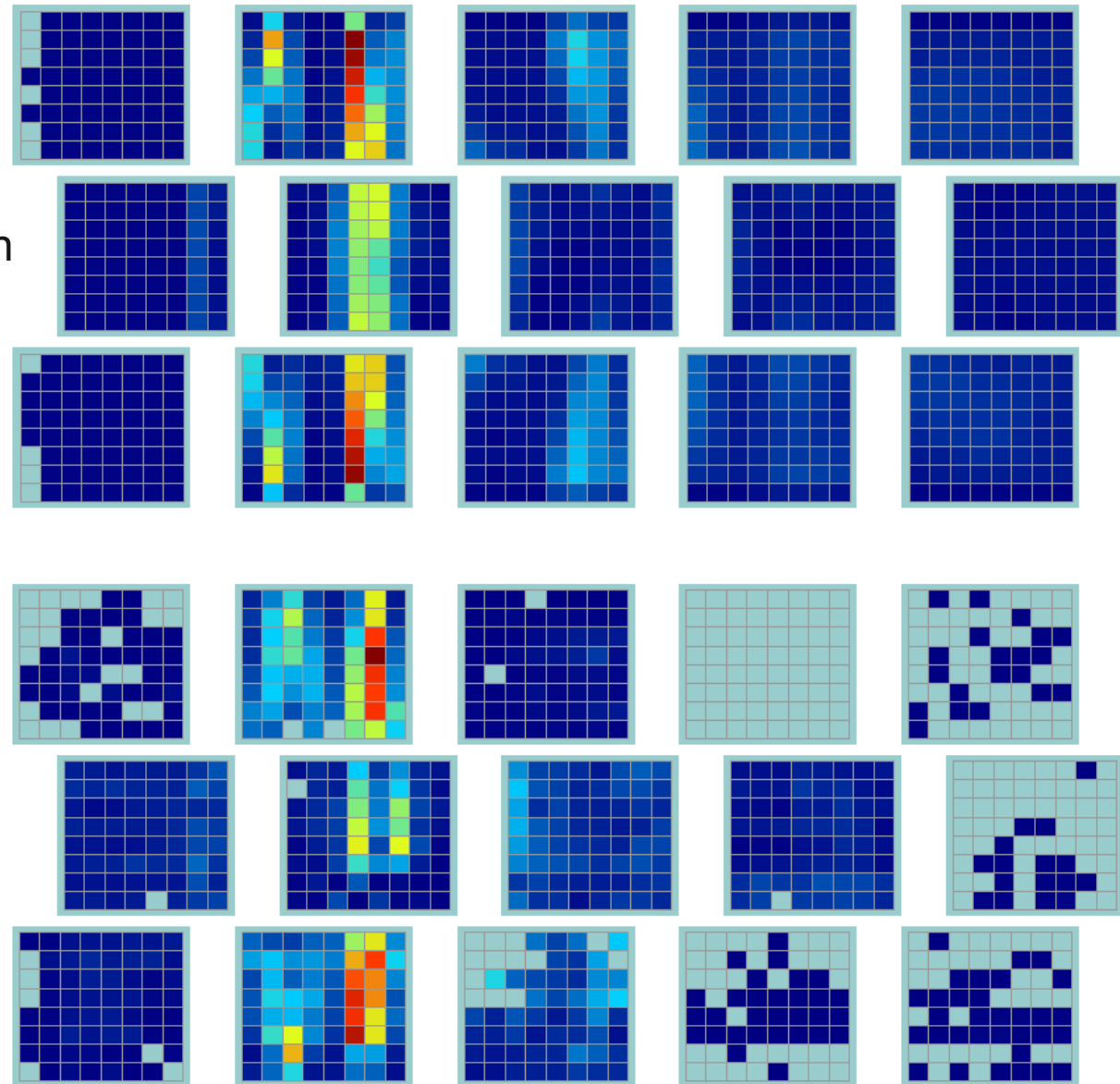
Figures from MÖLLER-WEDEL
OPTICAL GmbH

Prototype test 2014, first results

Test of wide plate with and without focusing



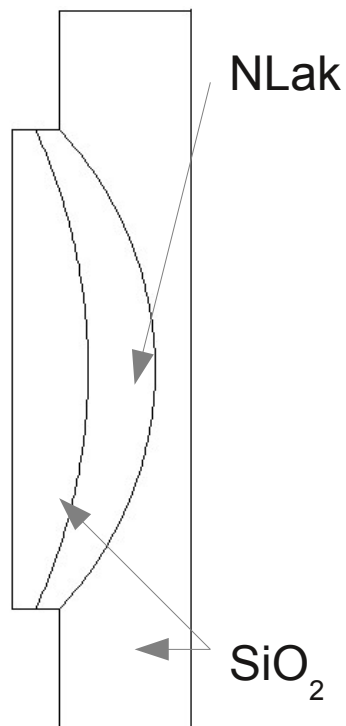
1.7 GeV/c, 120° θ , cyl. Lens



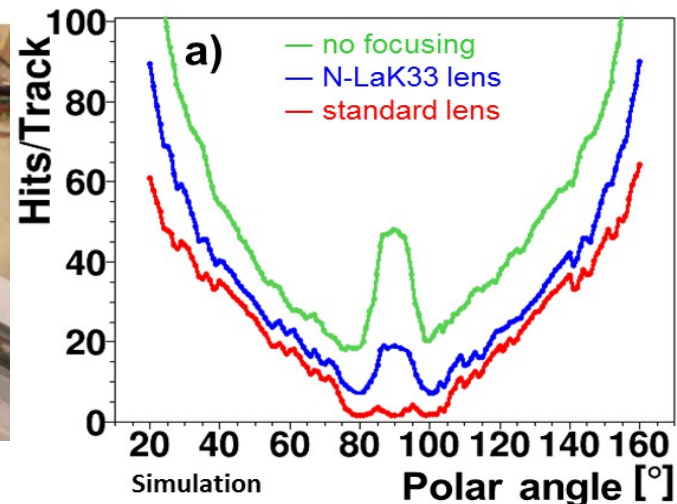
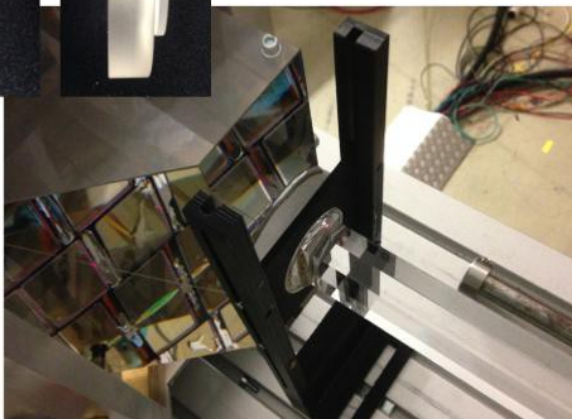
To be continued...

Prototype test 2014, first results

Test of a new 3-component high N lens with narrow bars



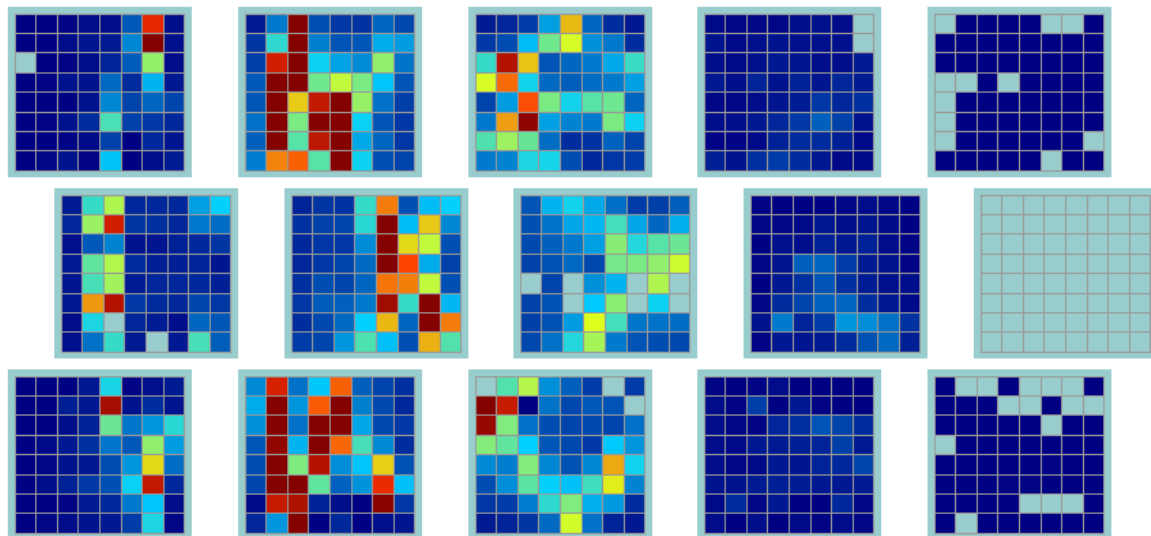
Better focusing expected and less photon loss



Data looks good with typical folded ring structures

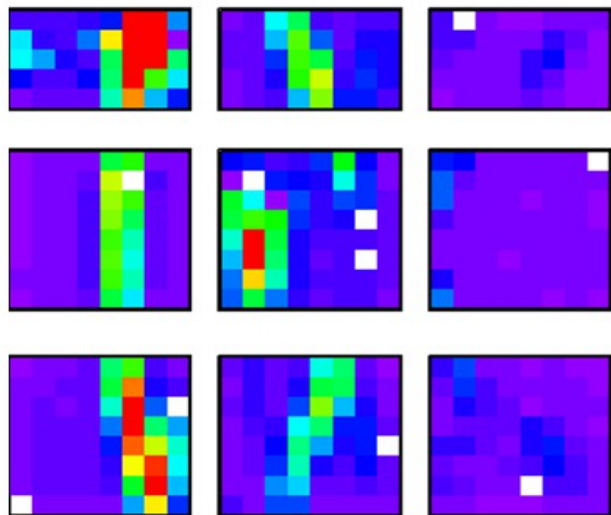
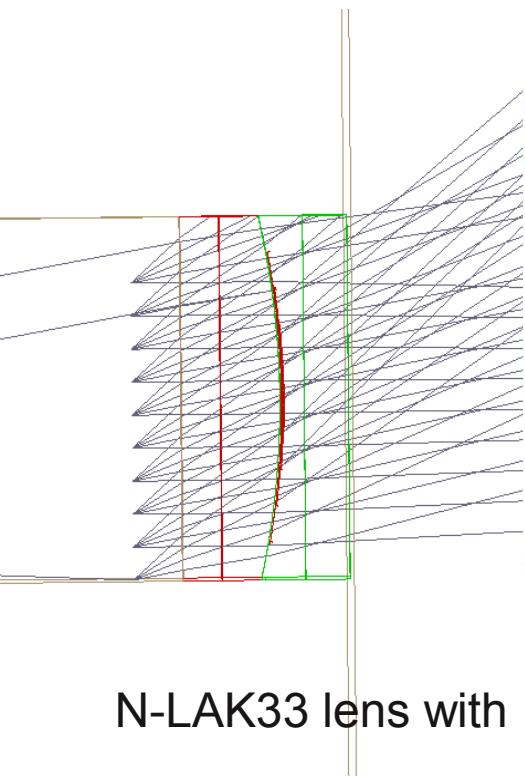
No comparison to sim yet

1.7 GeV/c, 125° θ

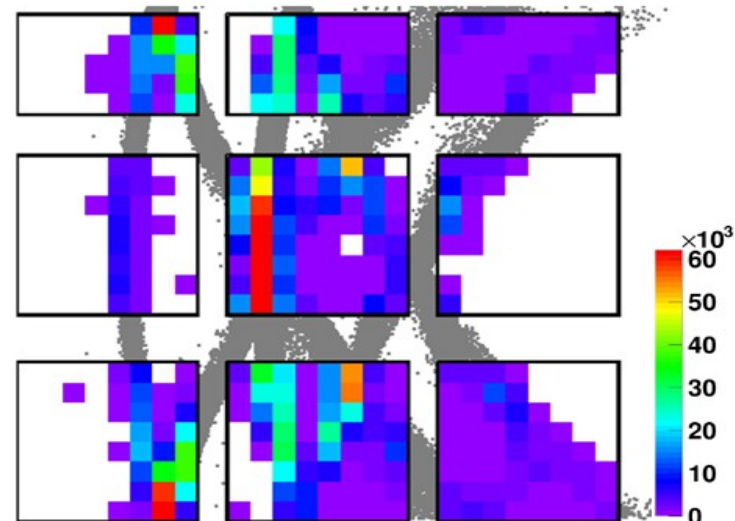


CERN 2012

124 deg. 10 GeV pi



Test beam data

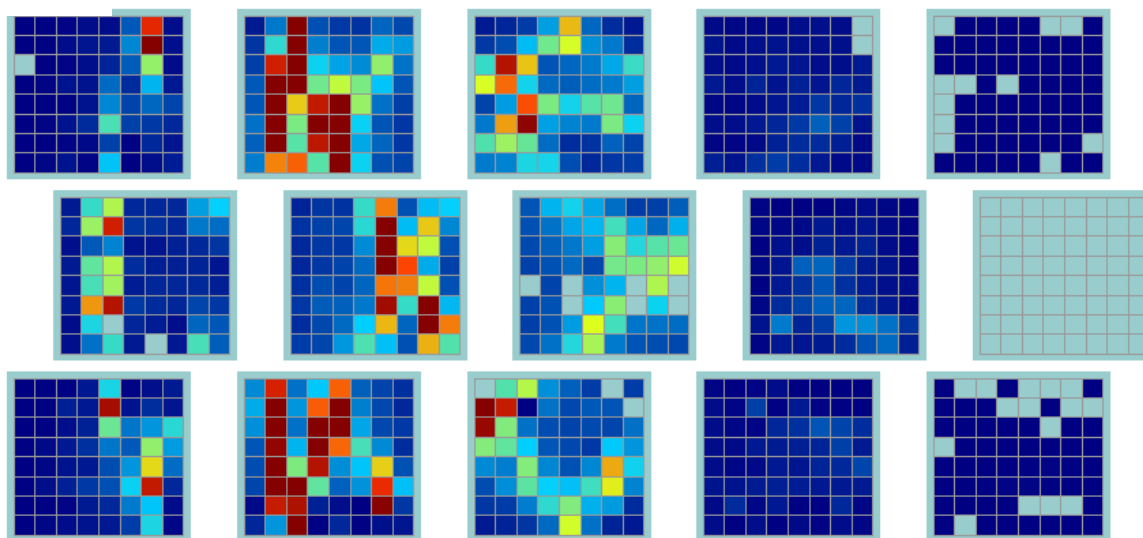
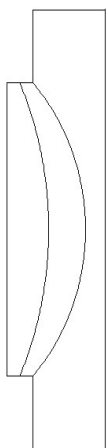


Simulation

N-LAK33 lens with 1 curved surfaces

GSI 2014

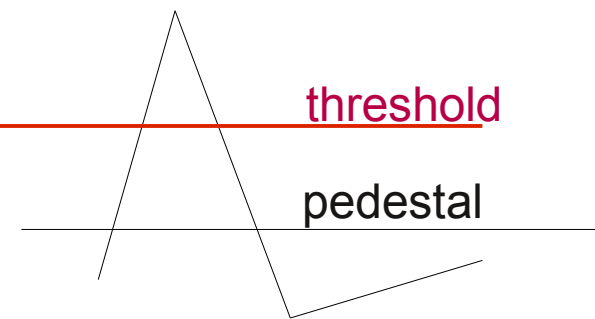
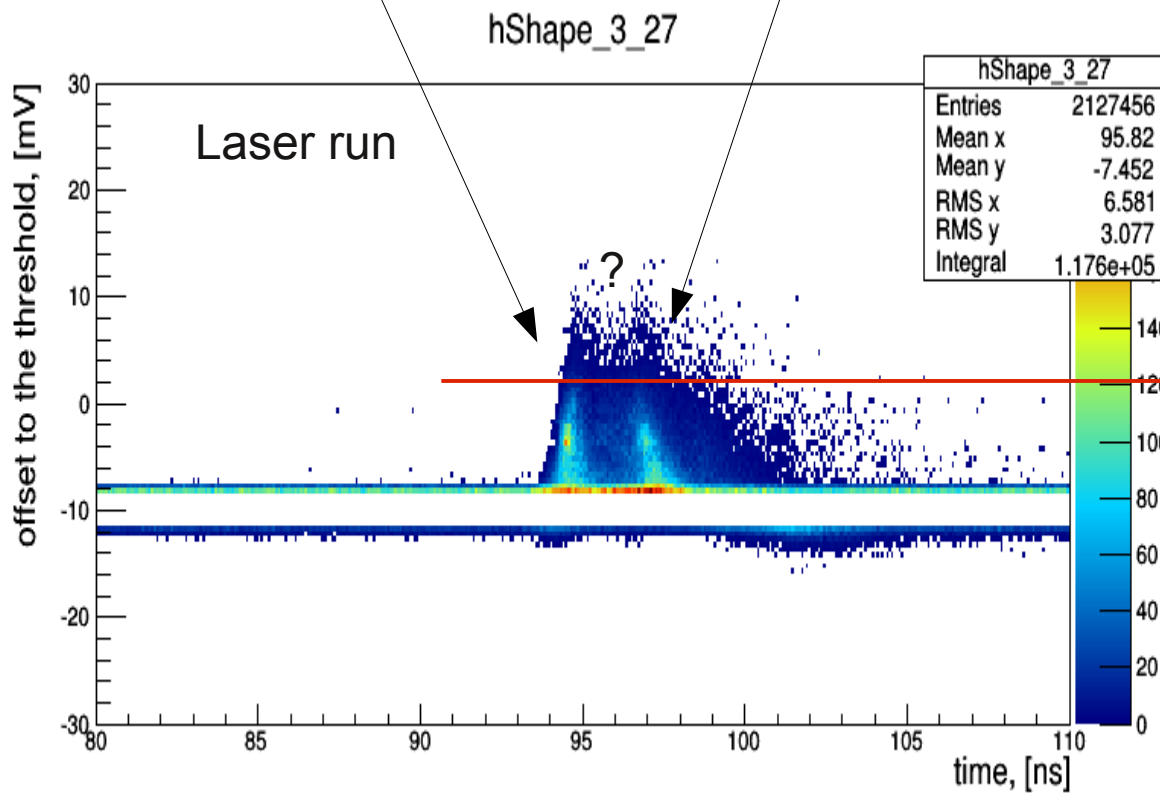
125 deg. 1.7 GeV pi



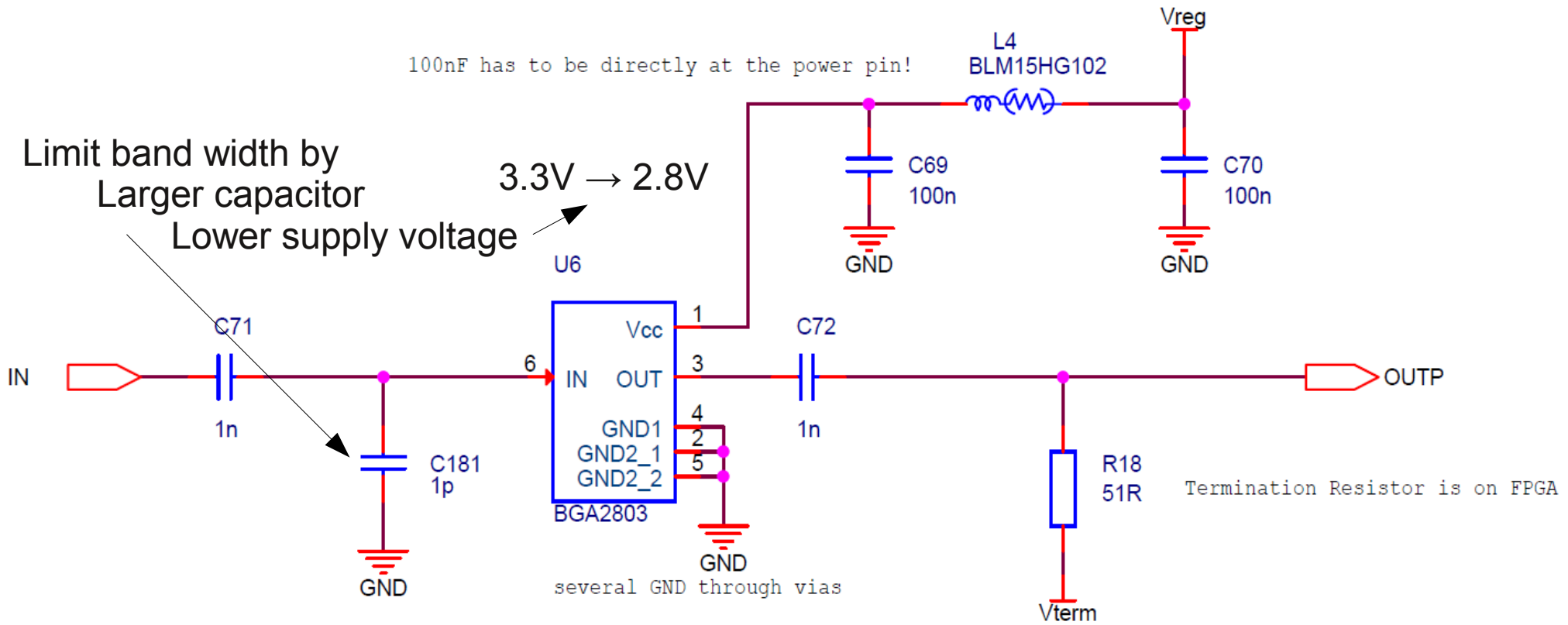
N-LAK33 lens with 2 curved surfaces

PADIWA optimization

For each event 2 entries:
Leading edge trailing edge



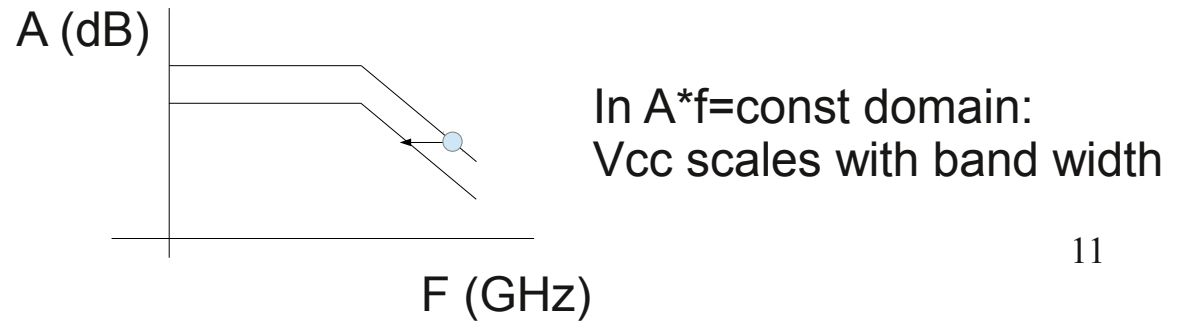
Automatic noise band search finds too large values → noise, feedback
Counter measure → reduce band with of PADIWA



15pF : 15pF x 50 Ohms = 750ps

45pF

←—————→ NINO: 760 ps

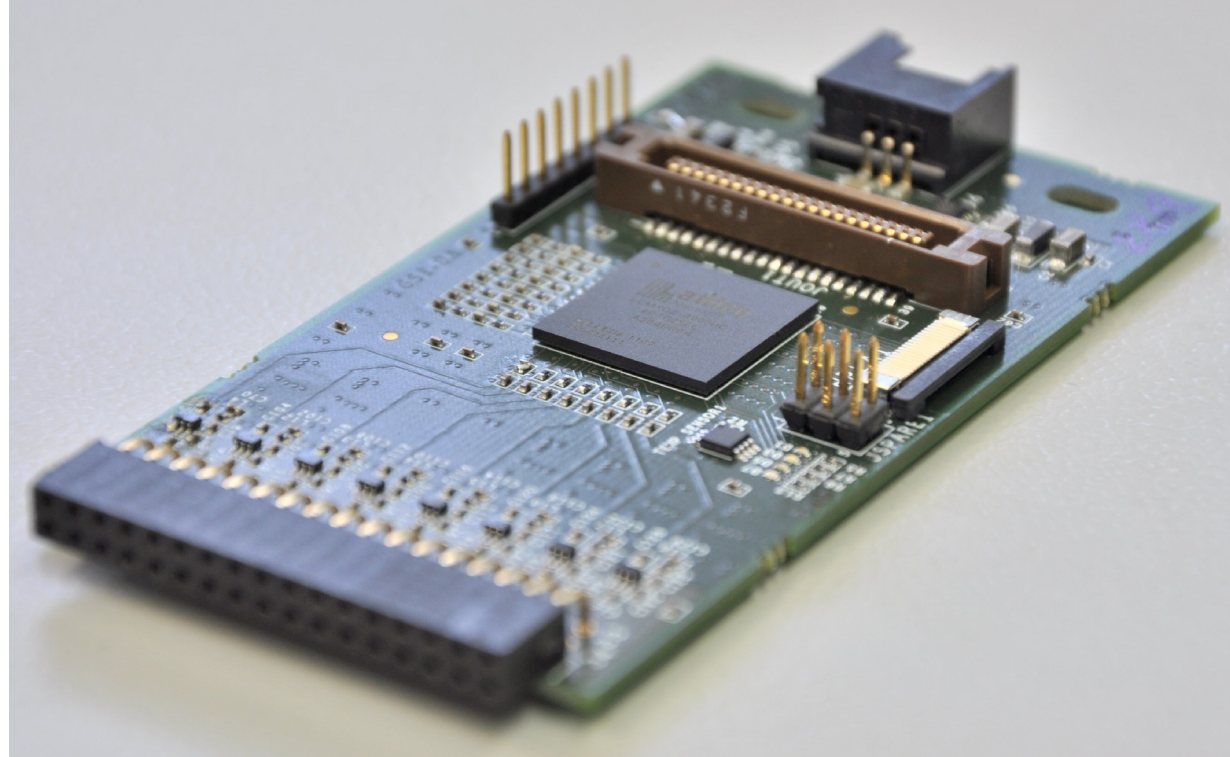


**Meeting in Mainz end of November addressing
noise problem and possible optimization of PADIWA**

Mainz looks for noise in MCP-Padiwa (small setup)

DIRC group at GSI studies noise of full setup (eg. ground loops in large setup)
Full setup will be installed in electronic lab in Heck-area next weeks

M.Traxler at GSI analyses noise of PADIWAS in clean electronic environment



Heck laboratories get active
Electronic lab
Optics lab

Beam time data still analysed
Plate measurements
Bar measurements, new lens

PADIWA need optimization cycle

Applications for
Test beams at CERN 2014