

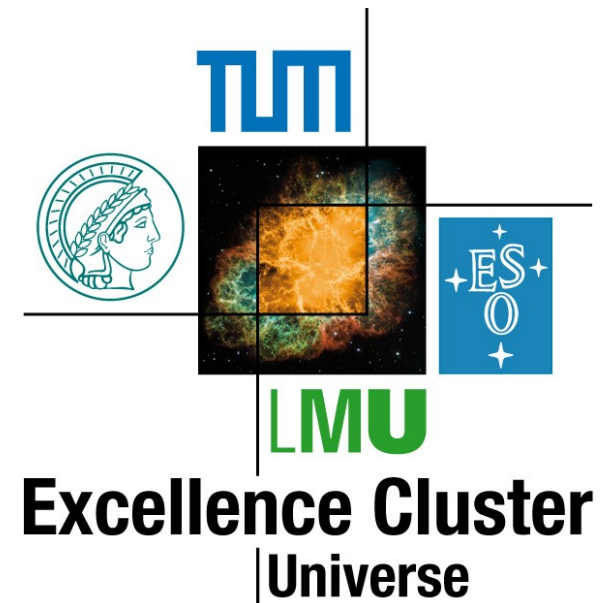
Detector Geometries for the PXD Optimization

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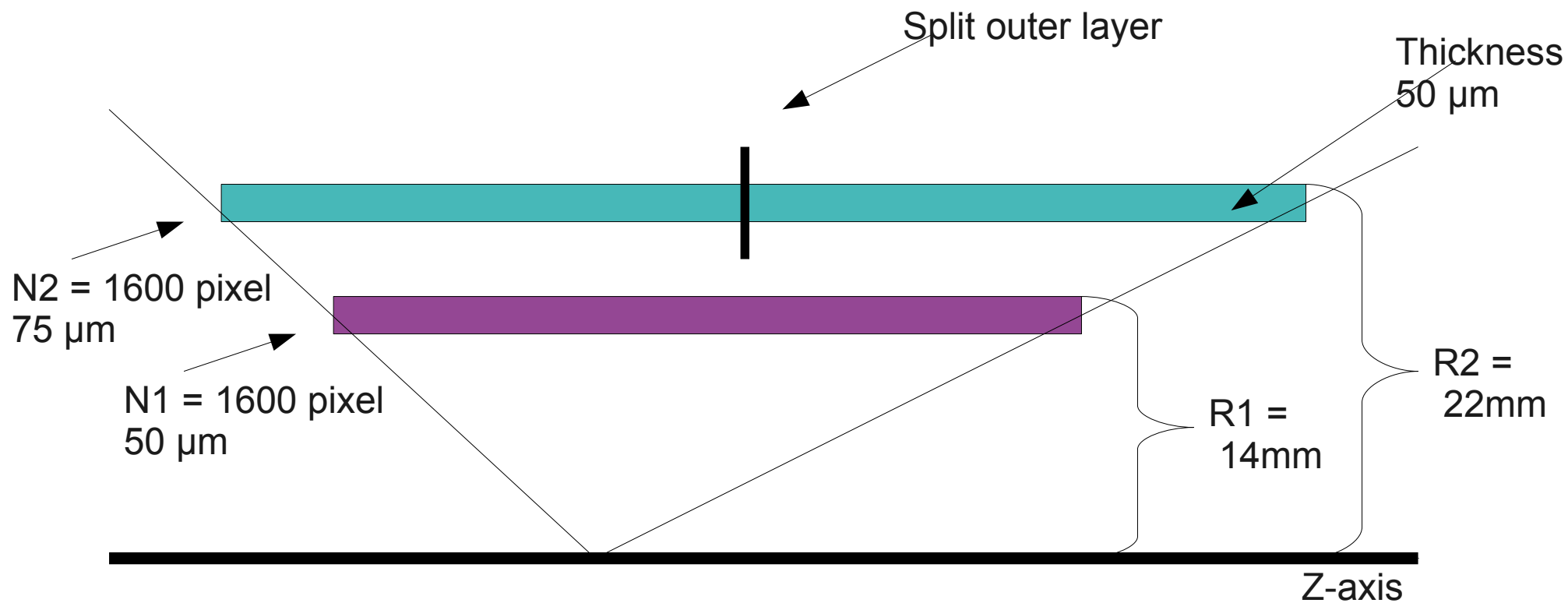


Max-Planck-Institut für Physik
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PXD meeting 12.01.2010

- Baseline option
 - output of the former optimization studies
 - mechanically/technologically possible
 - very good physics performance
- Modified detector models
 - technological choices
 - background studies



Baseline: R1=14; R2=22; Thickness=50um; N1=N2=1600

- Study 1: (variation of inner radius)
 - R1 = 13 mm
- Study 2: (variation of sensor thickness)
 - Thickness = 75 um
- Study 3a: (variation of number of pixels and readout speed)
 - N1 = 800 pixel
- Study 3b: (variation of number of pixels and readout speed)
 - N1 = N2 = 800 pixel
- Study 4: (break the inner layer)
- Study 5: (Optimal but still conceivable PXD)
 - R1 = 13mm; N1 = N2 = 2000 pixel

- Status
 - New detector models implemented
 - Detector resolution in R - ϕ – z determined
- Outlook
 - Results for the Prague meeting seem possible

**Thank you for your
attention!**

- Simulation
 - Modification to Mokka to read lund7 file format
 - Allows to take into account time information
- Reconstruction
 - Introduction of time cuts in the digitizers
 - Simulates the integration time of the subdetectors
- Background events
 - Work in progress
 - Will be distributed in time