

# Belle II PXD EVO Meeting

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## Update on PXD Occupancy Studies

- Touschek
- Radiative Bhabha scattering
- QED background



Max-Planck-Institut für Physik  
(Werner-Heisenberg-Institut)



MAX-PLANCK-GESellschaft

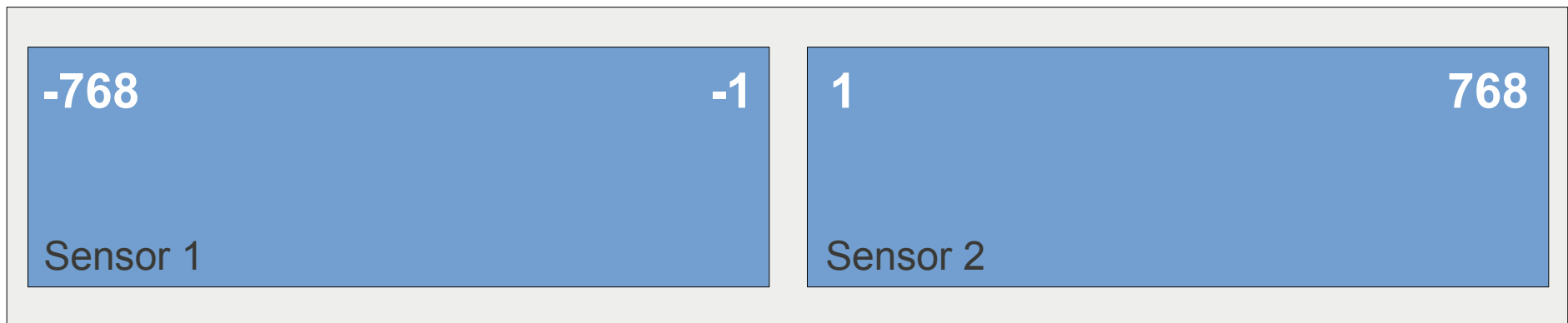


## Same simulation parameters as for the Ringberg talk

- ✓ Occupancy distribution in z
- ✓ A few more readout frames for the Touschek background

## All plots use the following convention

Ladder

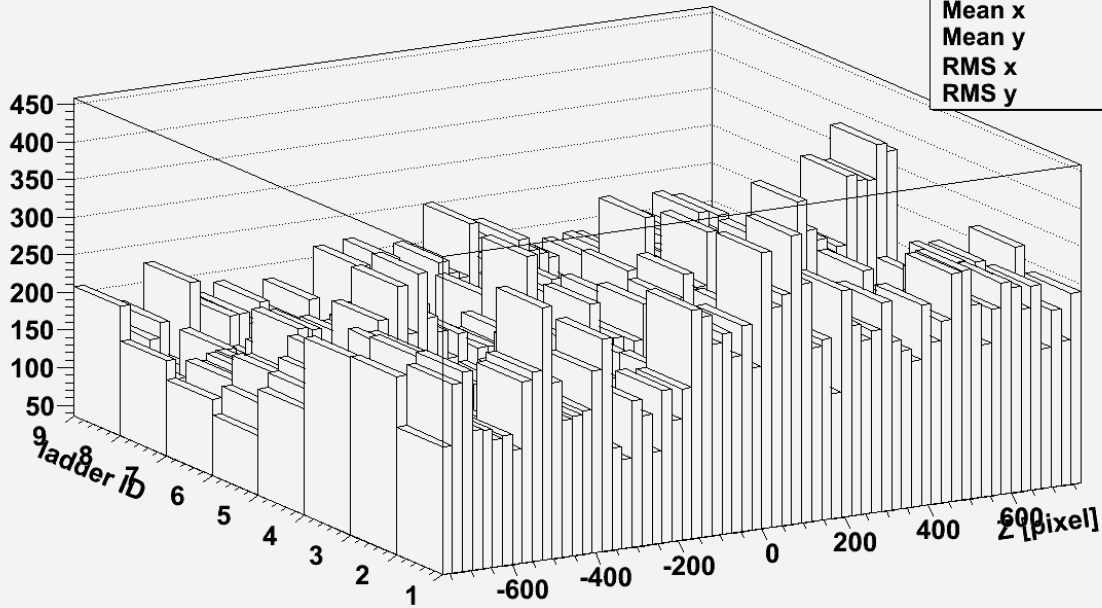


Backward

Forward



zPixVsLadderID\_layer1



zPixVsLadderID_layer1	
Entries	96376
Mean x	25.61
Mean y	4.131
RMS x	447
RMS y	2.314

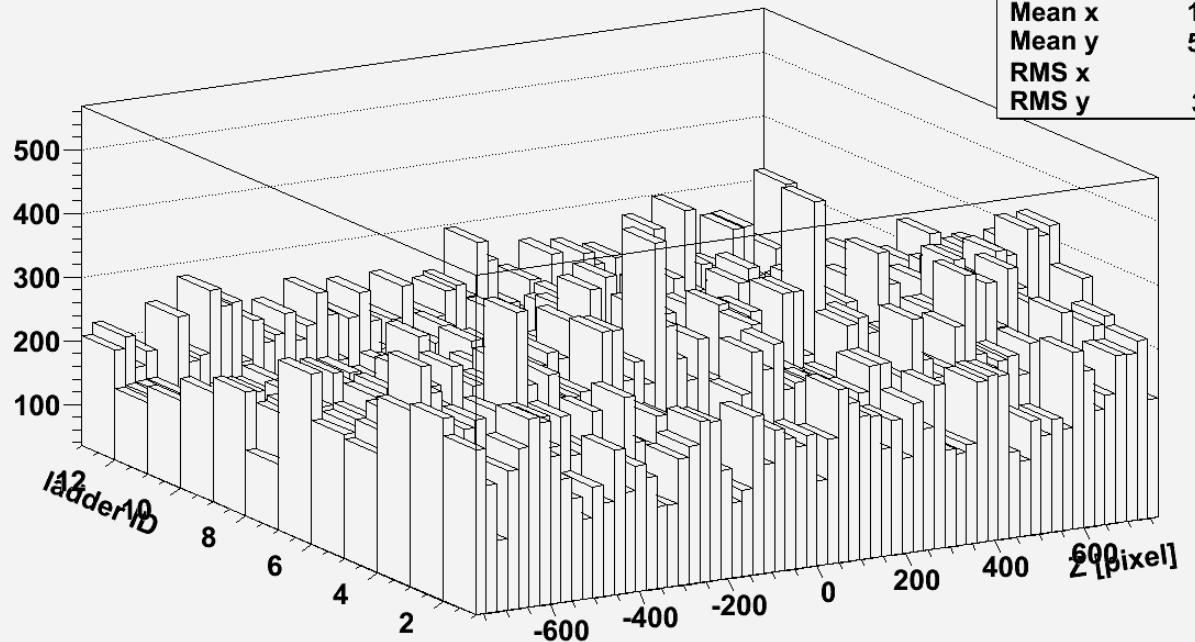
## Forward – Backward asymmetry:

Layer 1 -  
 Layer 2 -



**BUT: Low statistics**

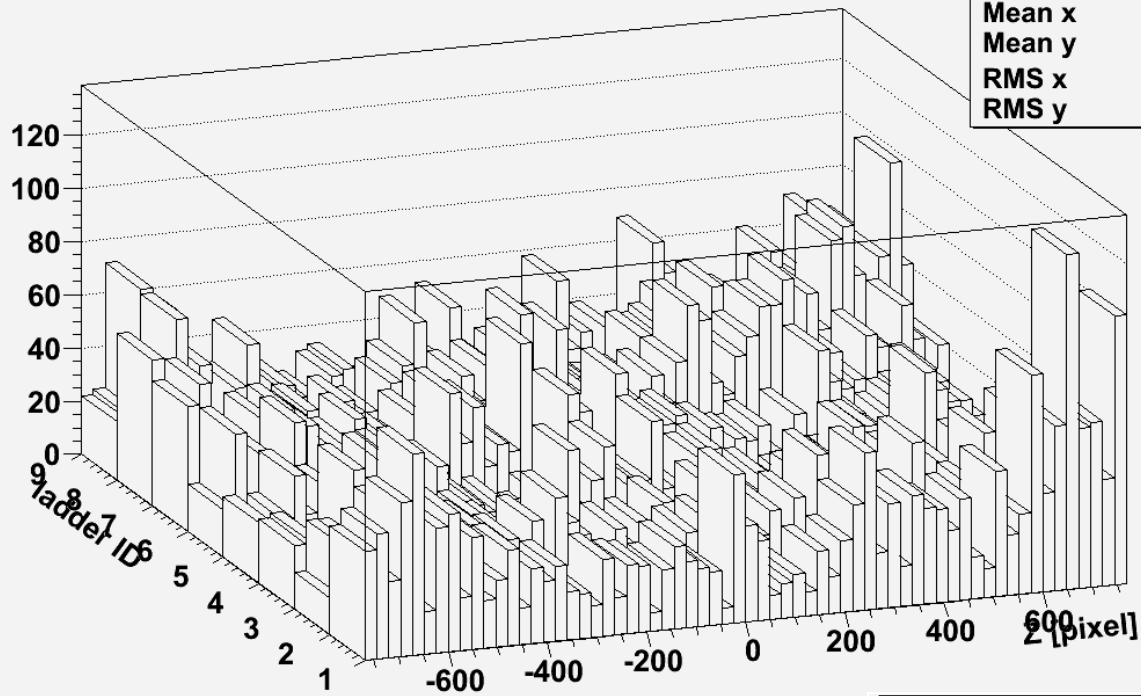
zPixVsLadderID\_layer2



zPixVsLadderID_layer2	
Entries	168488
Mean x	19.75
Mean y	5.616
RMS x	444
RMS y	3.311

Simulated: 24 rof

zPixVsLadderID\_layer1



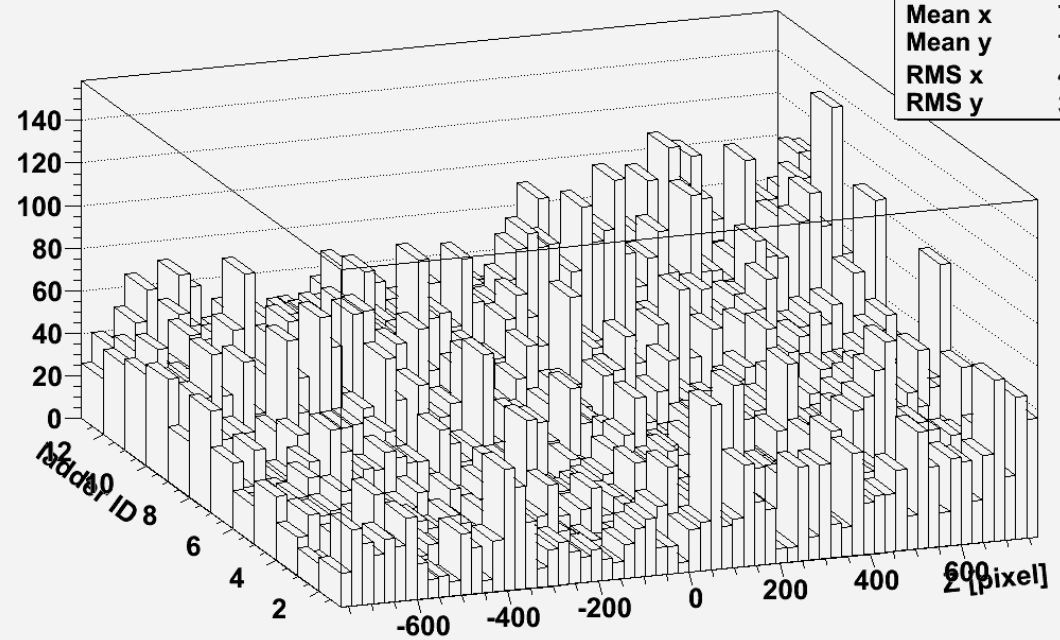
Forward – Backward asymmetry:

Layer 1 -  
Layer 2 -



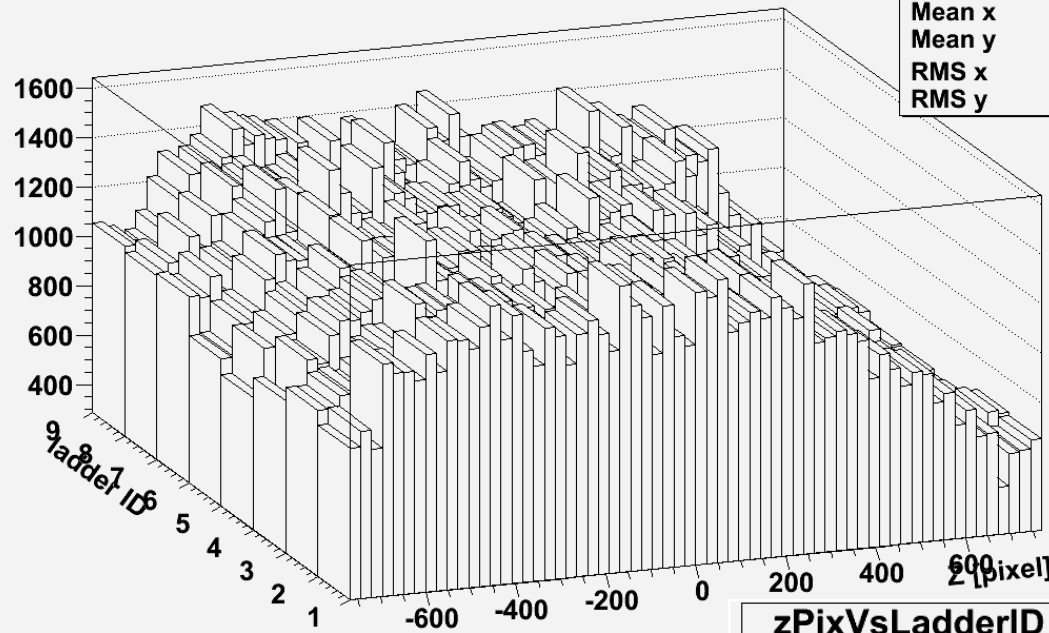
**BUT: Low statistics**

zPixVsLadderID\_layer2



Simulated: 56 rof

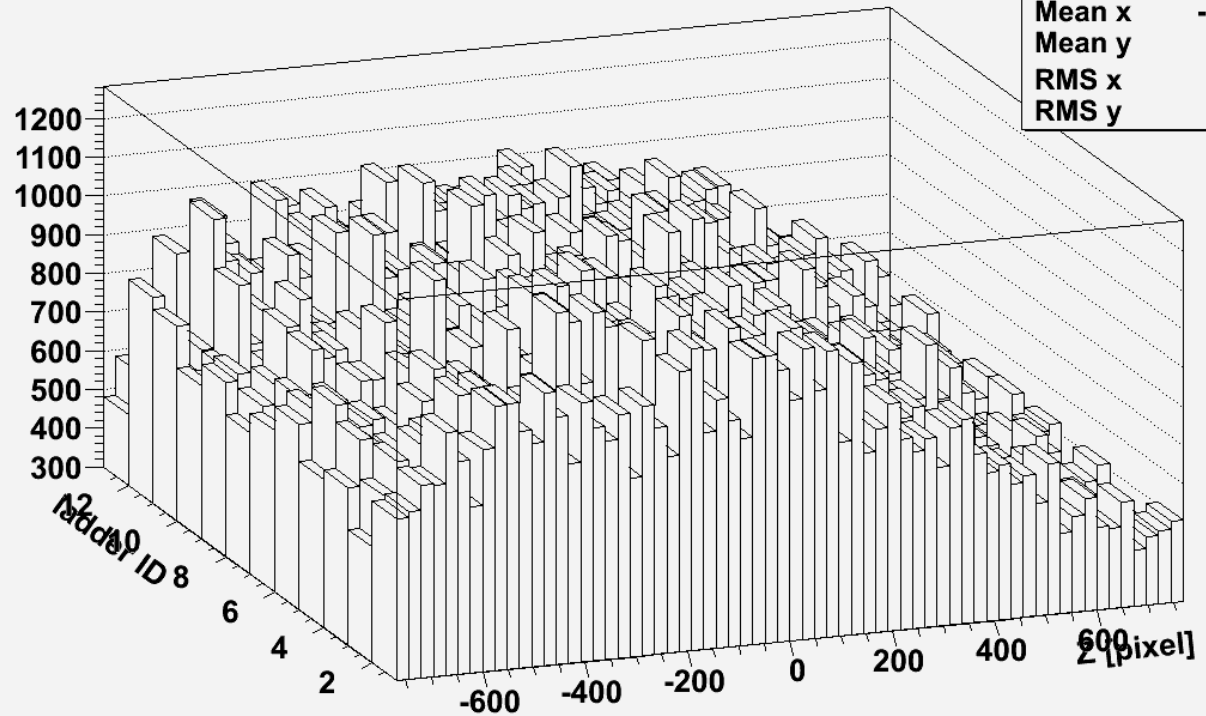
zPixVsLadderID\_layer1



Forward – Backward asymmetry:

Layer 1      *factor of 2*  
Layer 2      *factor of 2*

zPixVsLadderID\_layer2



Simulated: 100 rof

- ✓ First look into the occupancy distribution in z
- ✓ A few more readout frames for the Touschek background

## Outlook

- Tune simulation for the production of a high number of readout frames
- Use new PXD geometry and digitizer

## TWiki

The background group has now a TWiki page.

Please find background input files, framework steering files and final output files for hardware tests there.

<http://ekpbelle2.physik.uni-karlsruhe.de/~twiki/bin/view/Computing/BackgroundGroup>