Continue work with toy MC for GridPix

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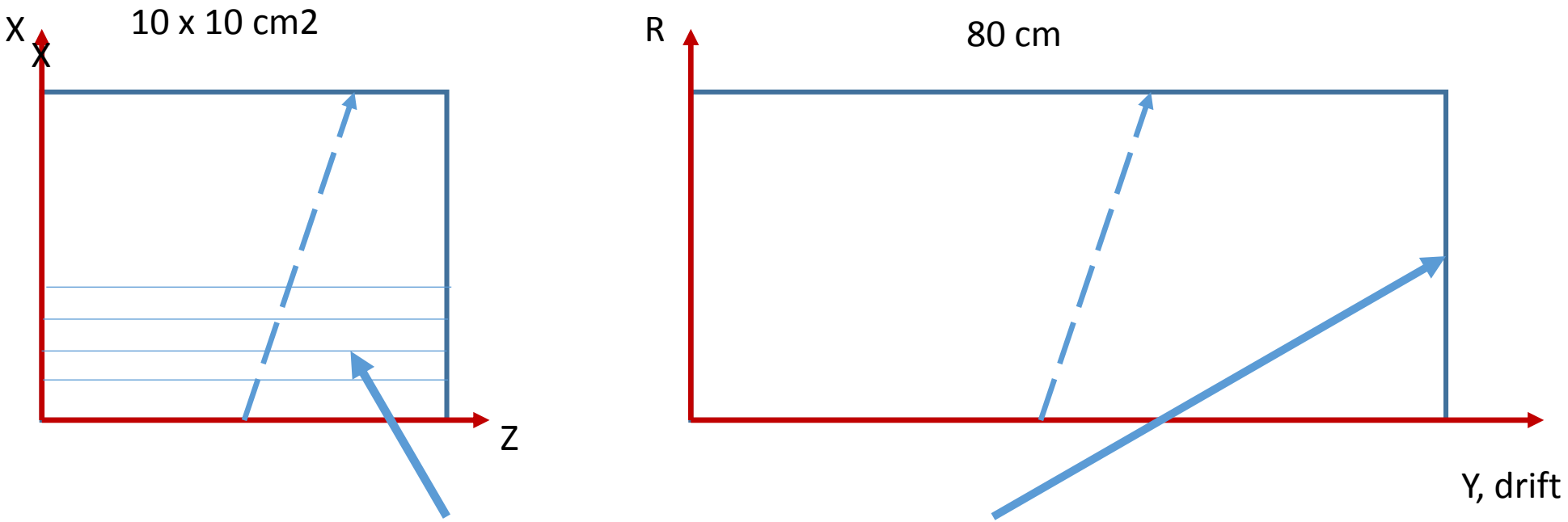
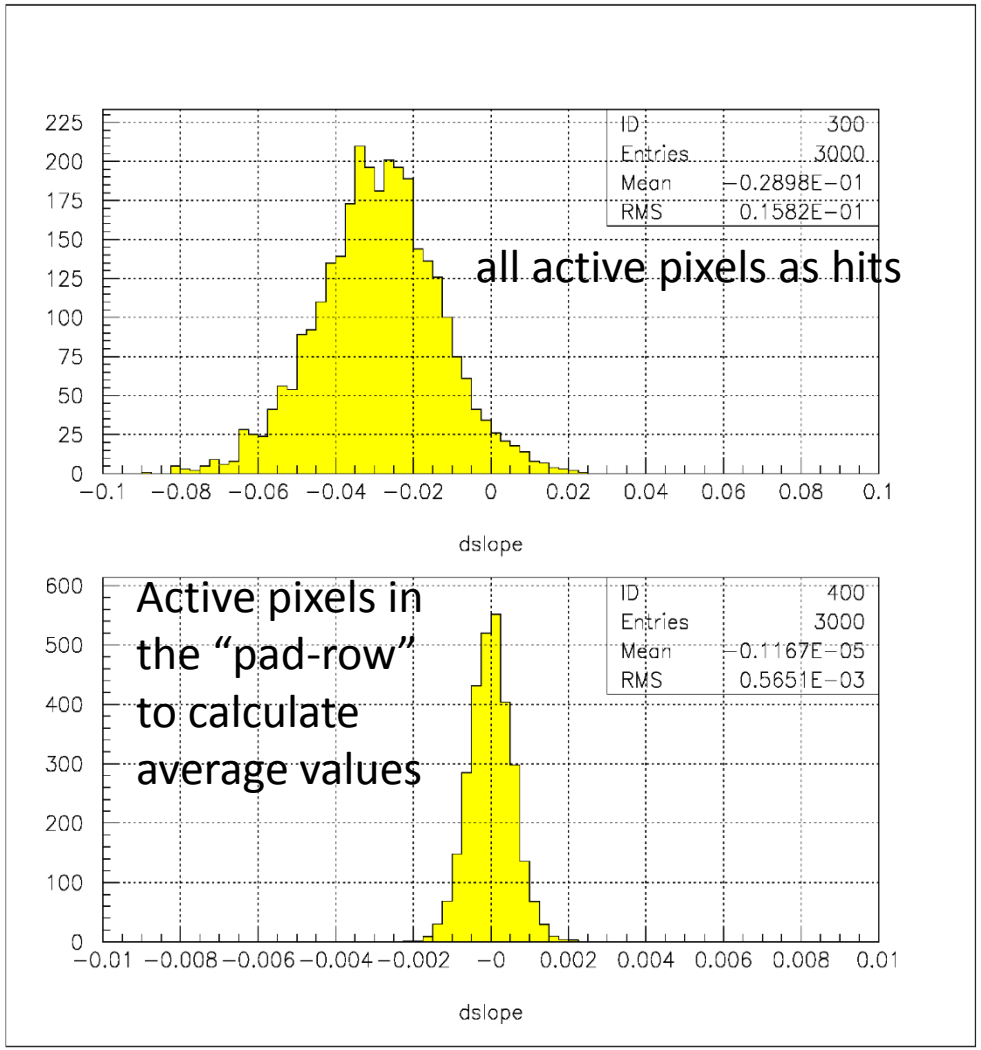


"artificial pad-rows": 0.1 and 0.3 cm

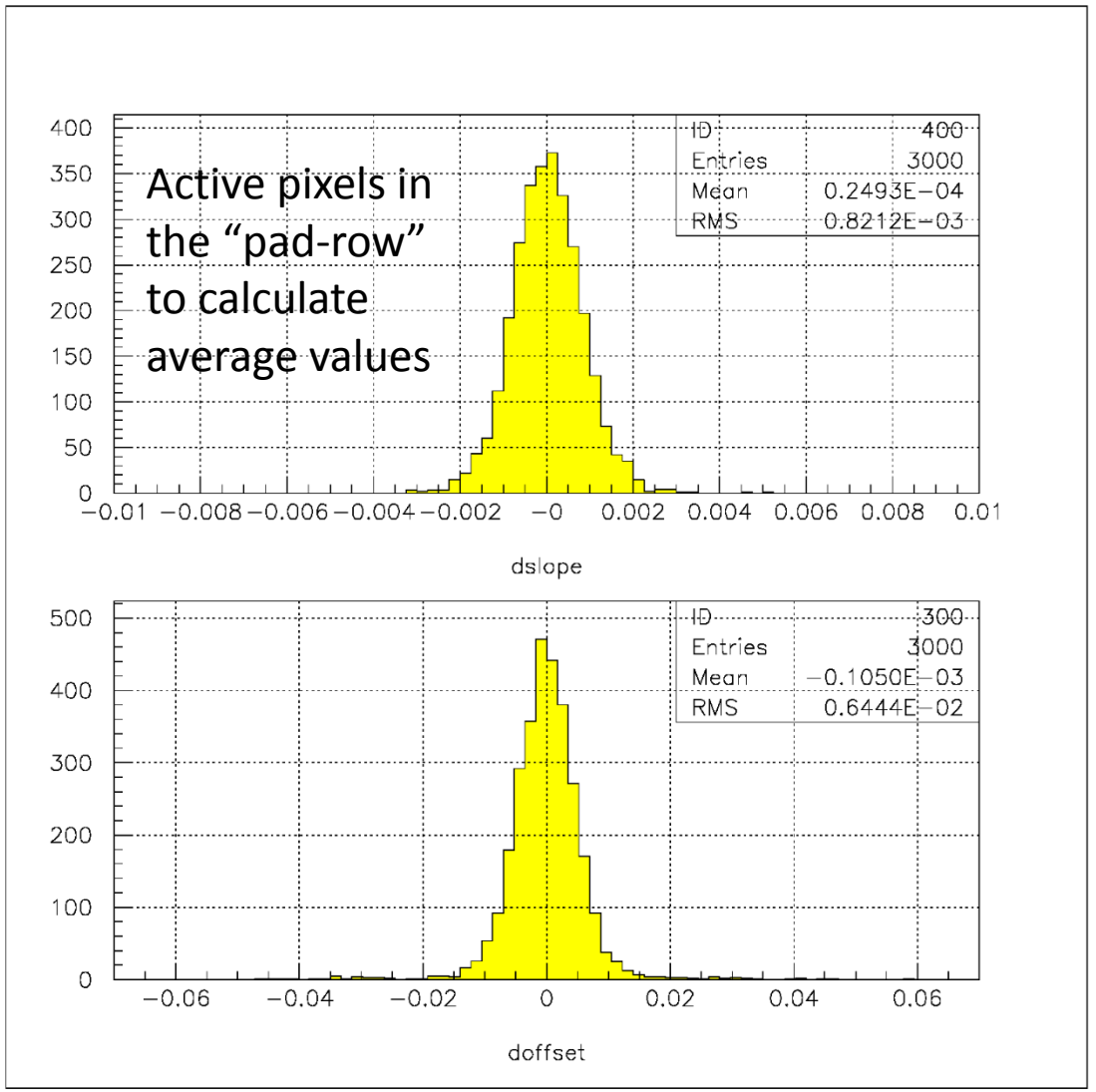
Simulate GridPix response using both BB and PAI models with P10 gas, no B-field, but diffusion parameters as T2K with 3 T field

Then reconstruct back "track" in (X,Z) and (Y,R) planes

d(XZ) slope, 0.3 cm, BB

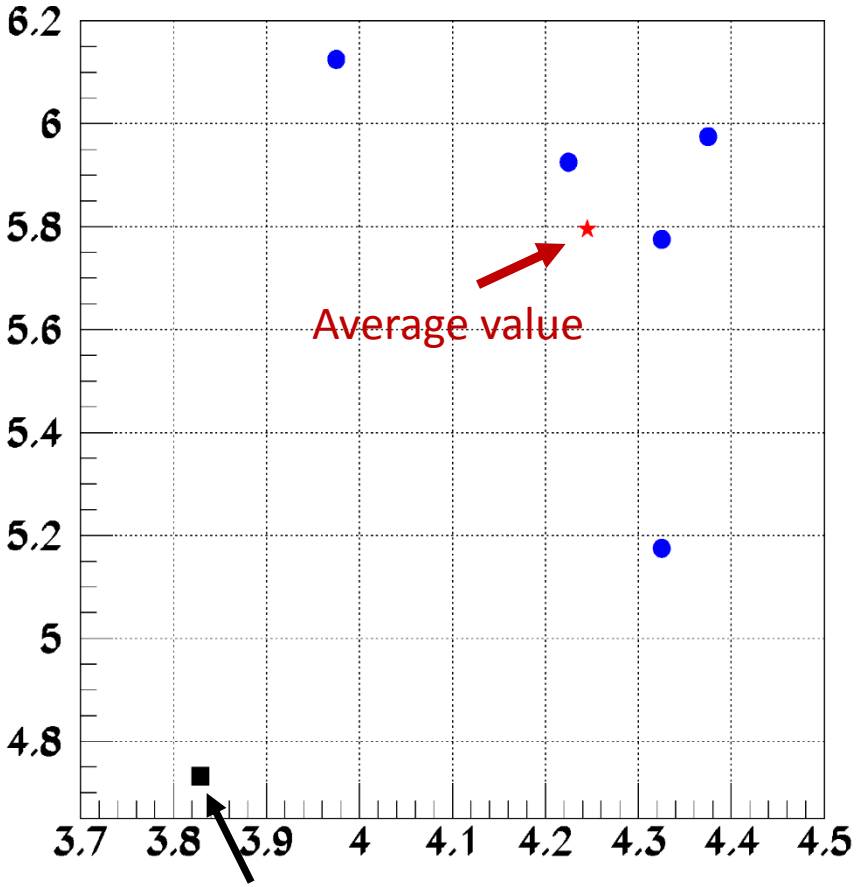


d(XZ) slope and offset 0.1 cm, BB

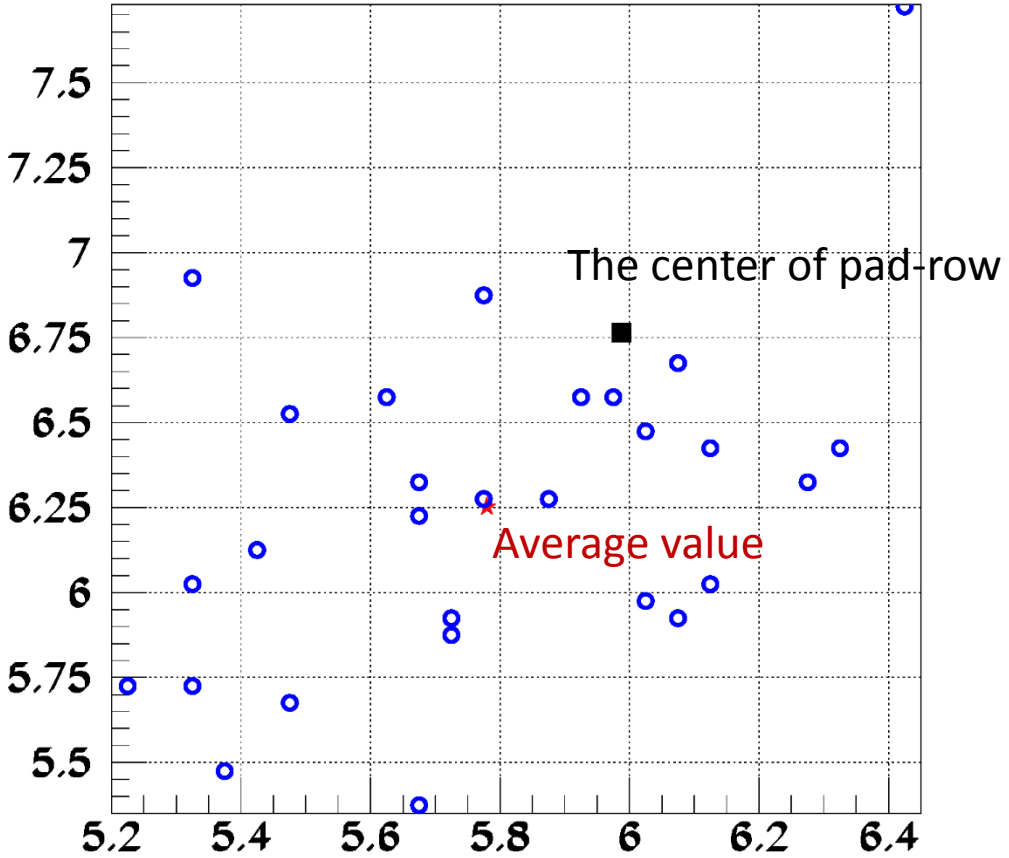


Special selected the response for two pad-rows with the worth reconstruction precisions

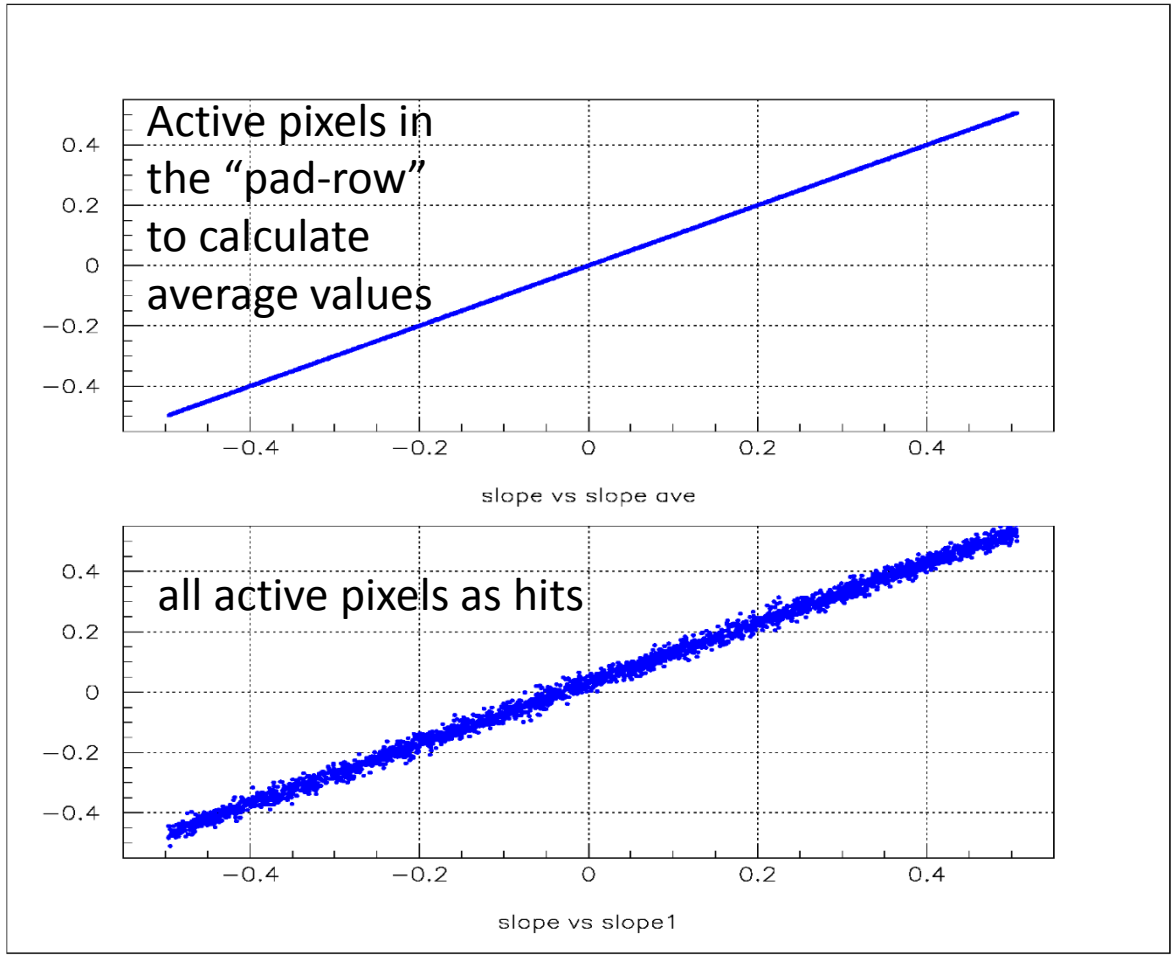
Scale in mm



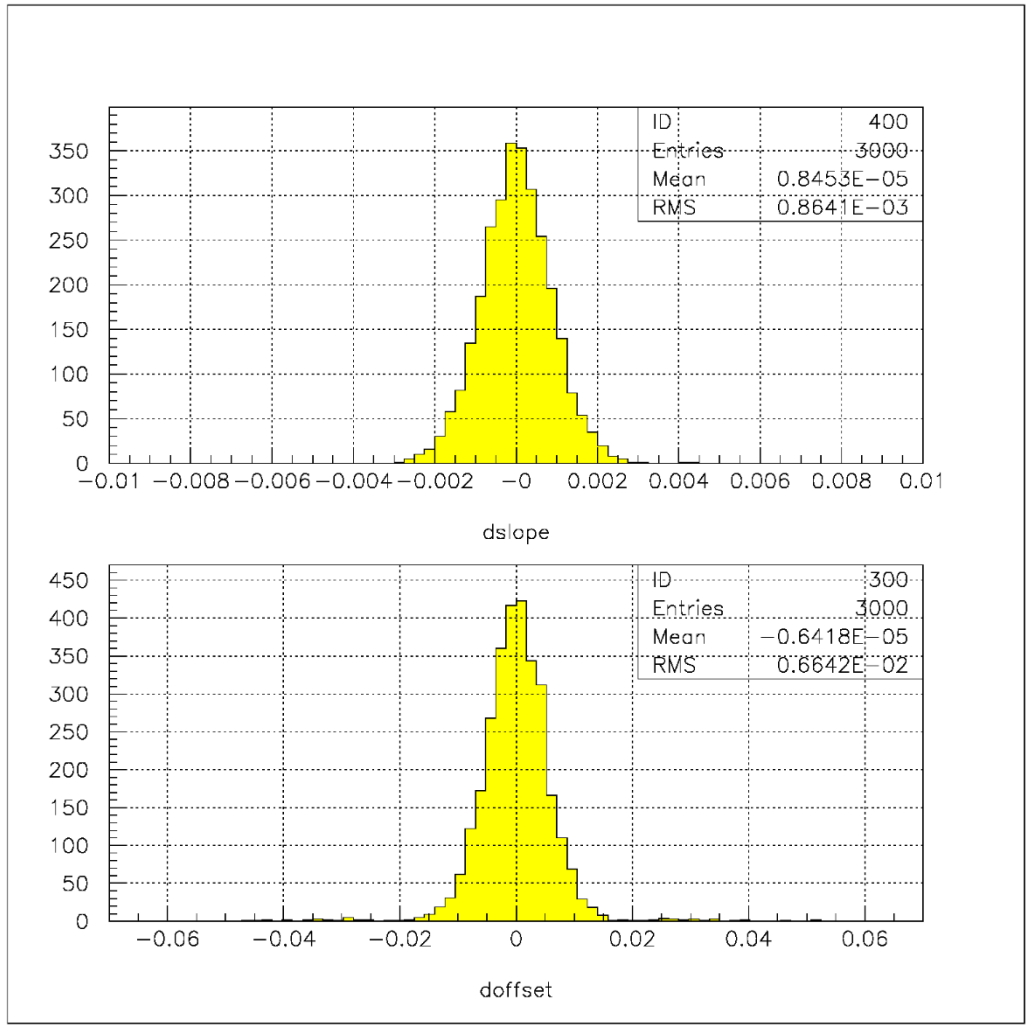
The center of pad-row (0.3 cm)



XZ slope simulated vs reconstructed

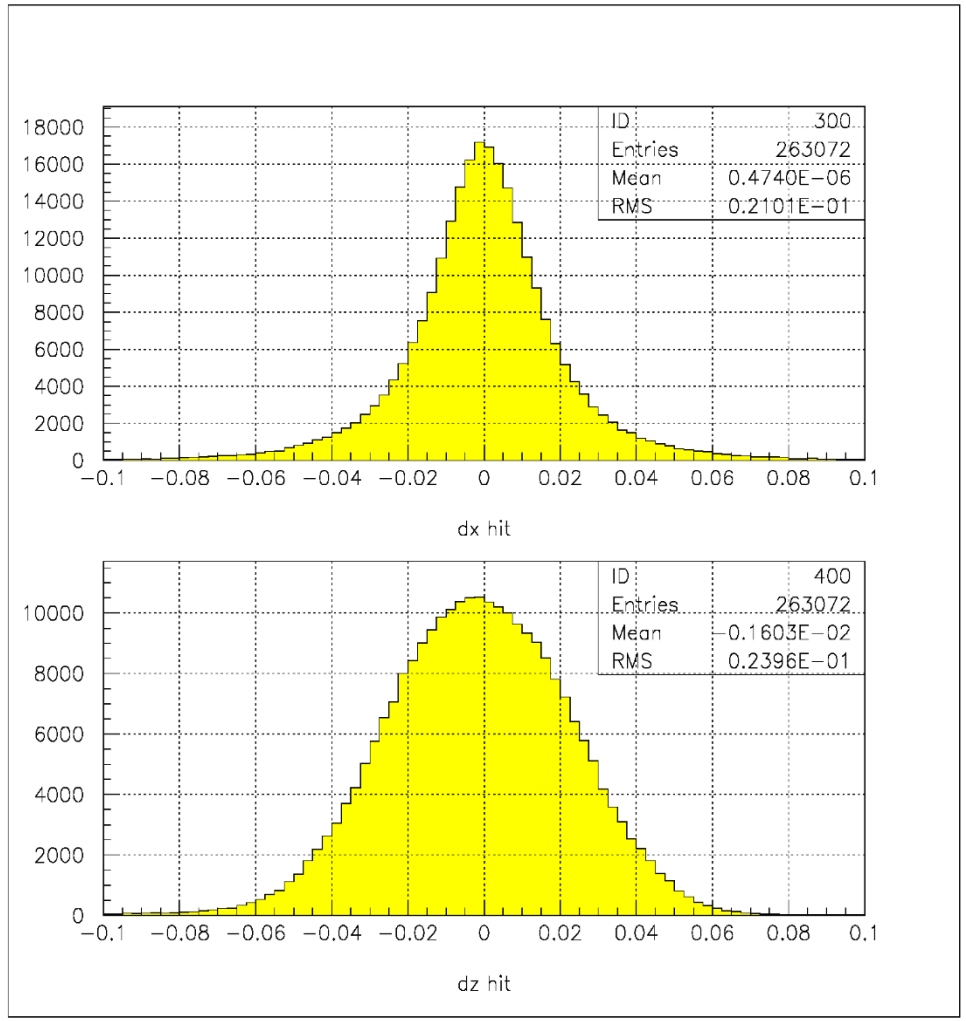


d(XZ) slope and offset, 0.1 cm, PAI

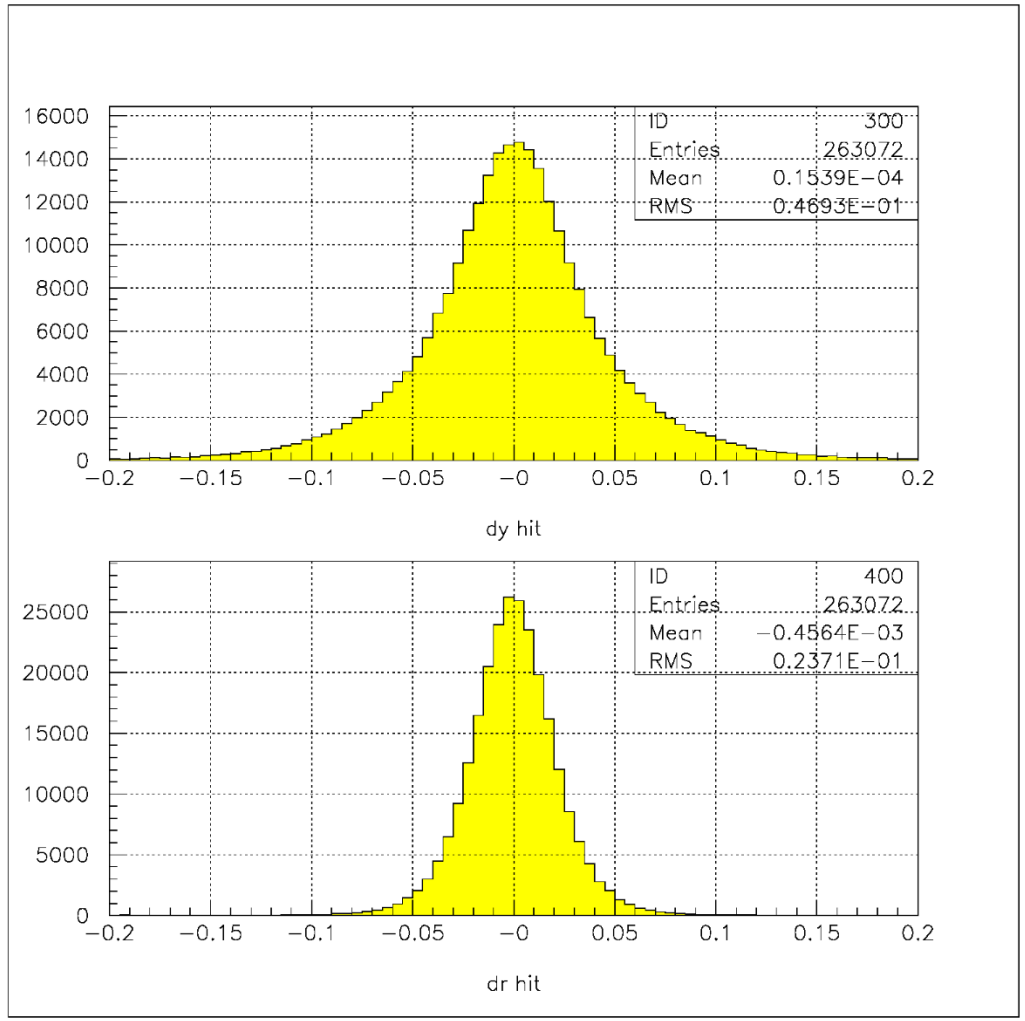


PAI model, 0.1 cm pad-rows

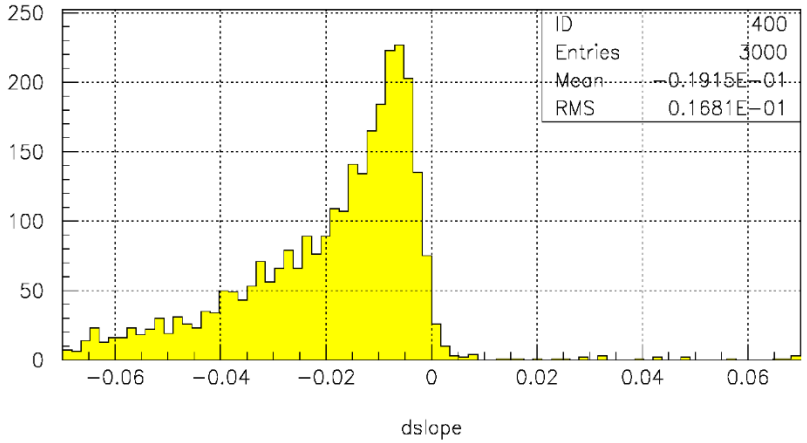
“Individual contributions”. dX and dZ

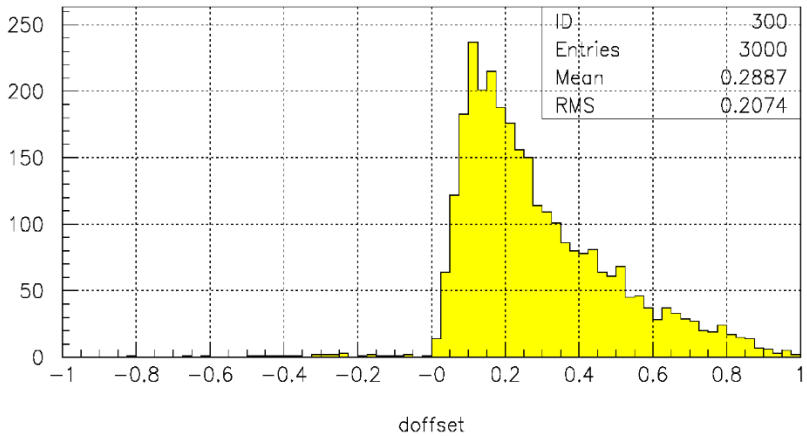


“Individual contributions”. dY and dR

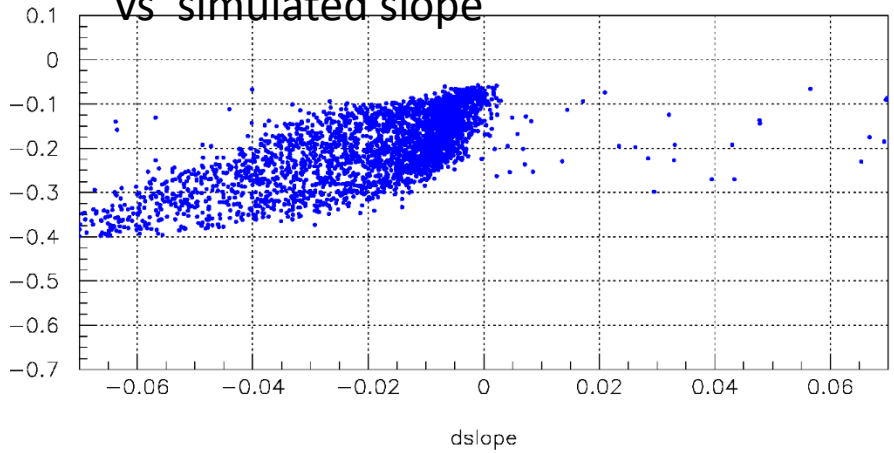


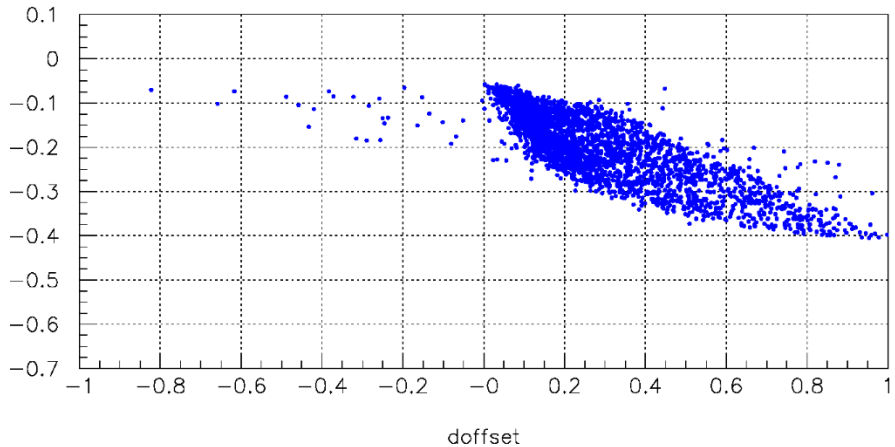
d(YR) slope and offset 0.1 cm, PAI





d(YR) slope and offset 0.1 cm, PAI vs simulated slope





Proposal

- This approach can be used for “fast simulation” (only tracking performance) with ~ 0.1 – 0.2 cm “pad-rows” and parameters (Sigma to smearing) from “toy” simulation
- The same can be done for the “real (slow)” simulation. Each pad-row means input-output point in GEANT. Use these points to prepare a straight line and use HEED and GARFIELD to simulate number of interactions, number and position electrons. Then drift, read-out response with “geom. – efficiency”, gas gain (Polya), noise, threshold, drift time, …