

Feasibility Studies of a L1 Pixel Track Trigger using Phase I Simulation

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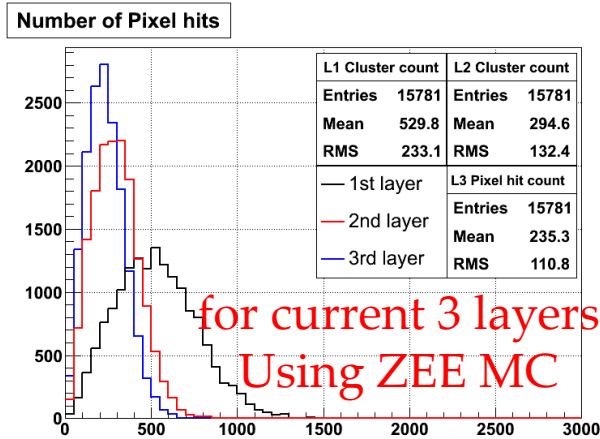


* Supported by the EU-IIF project 302103, "TauKitForNewPhysics"

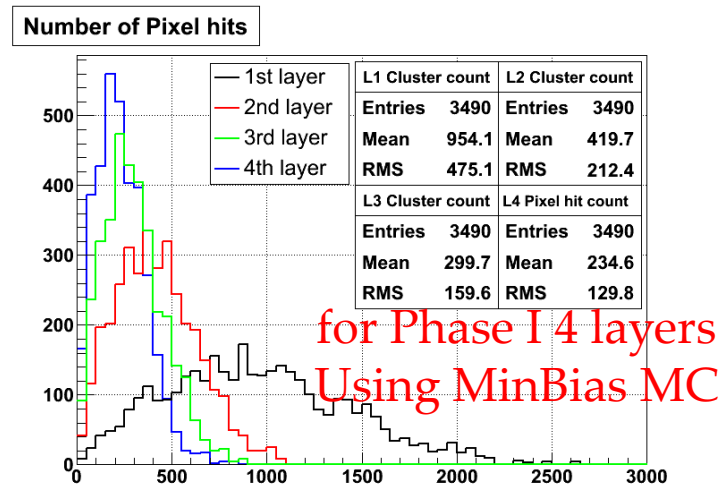
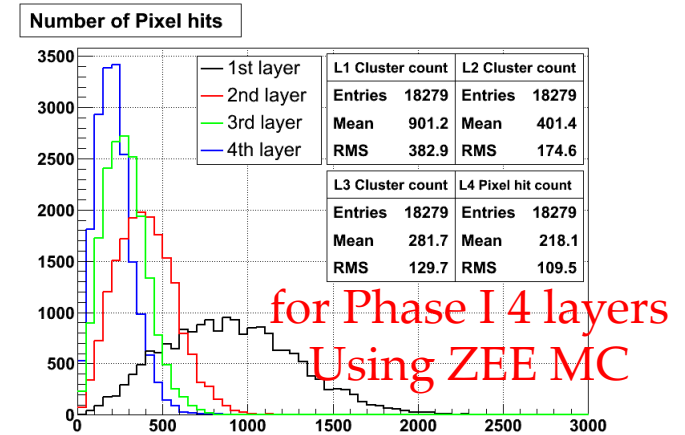


Number of Pixel hits comparison using MC

NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)



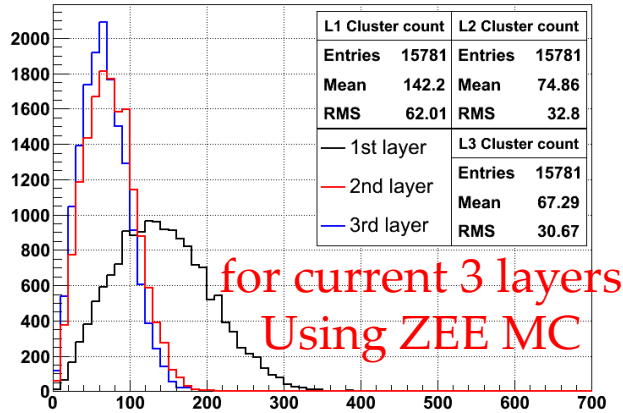
NO PILE-UP



Number of Pixel Clusters comparison using MC

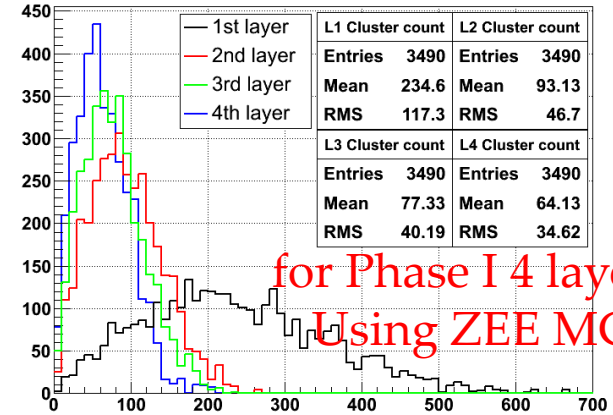
NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)

Number of Pixel Clusters

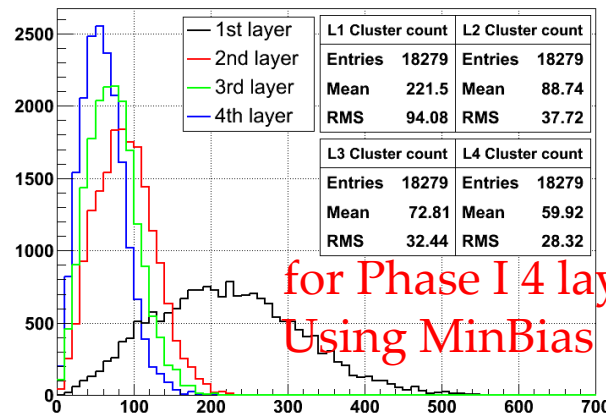


NO PILE-UP

Number of Pixel Clusters



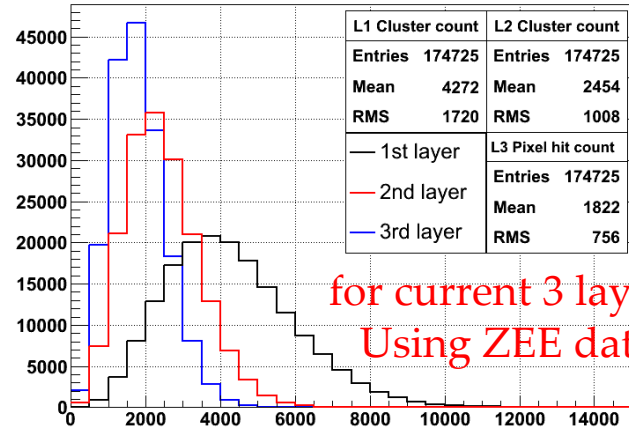
Number of Pixel Cluster hits



Number of Pixel hits comparison using DATA&MC

NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)

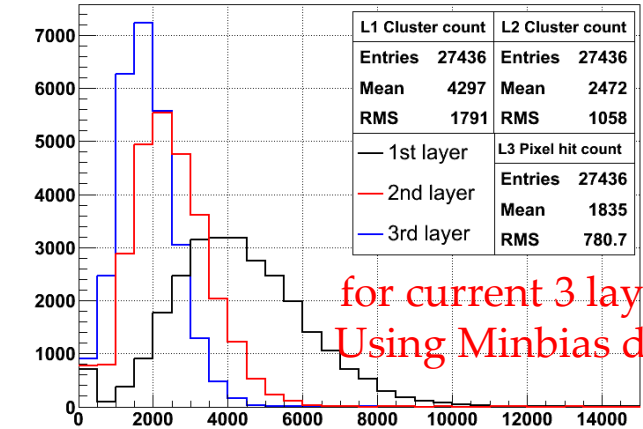
Number of Pixel hits



for current 3 layers
Using ZEE data

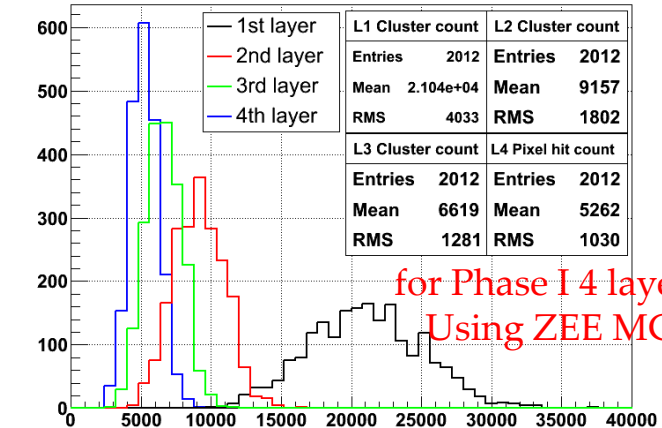
~10 PILE-UP

Number of Pixel hits



for current 3 layers
Using Minbias data

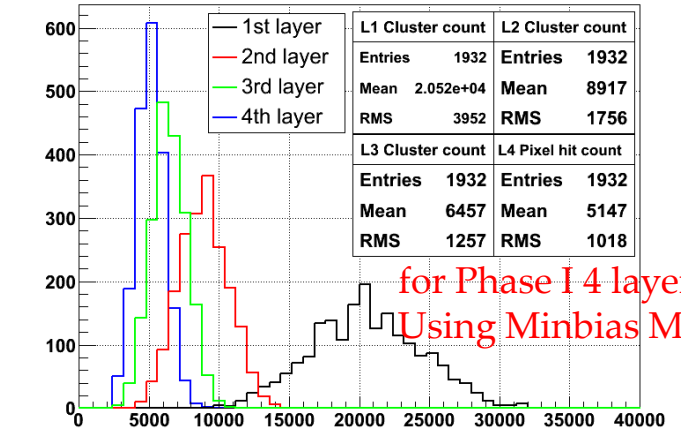
Number of Pixel hits



for Phase I 4 layers
Using ZEE MC

50 PILE-UP

Number of Pixel hits

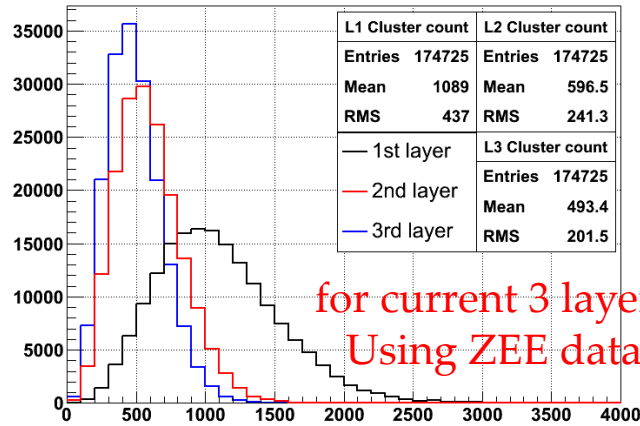


for Phase I 4 layers
Using Minbias MC

Number of Pixel Clusters comparison using DATA&MC

NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)

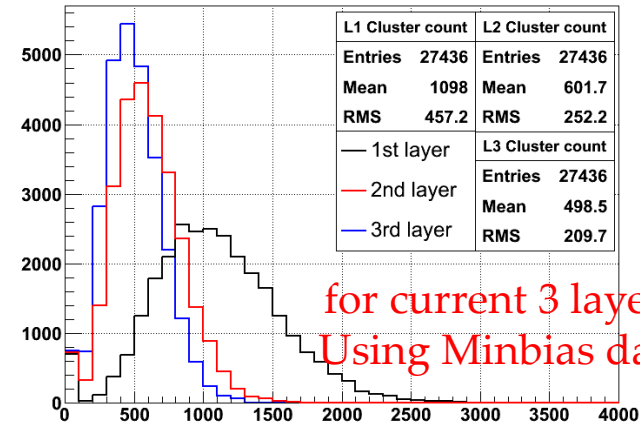
Number of Pixel Clusters



for current 3 layers
Using ZEE data

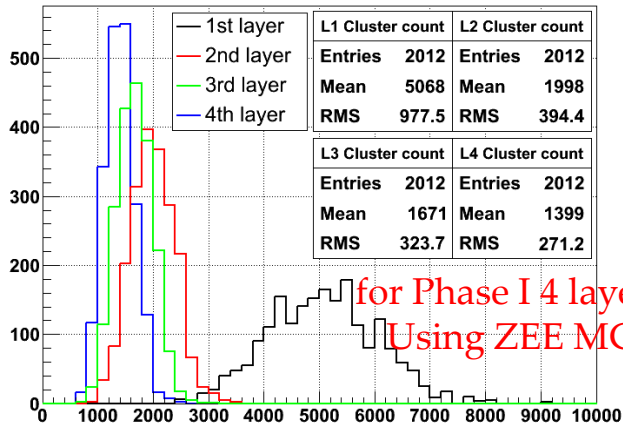
~10 PILE-UP

Number of Pixel Clusters



for current 3 layers
Using Minbias data

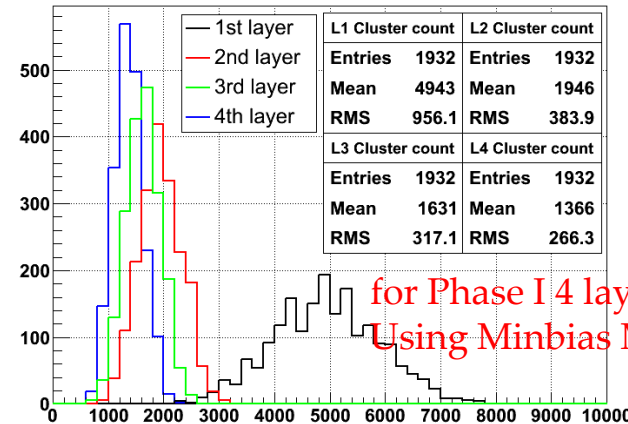
Number of Pixel Clusters



for Phase I 4 layers
Using ZEE MC

50 PILE-UP

Number of Pixel Clusters

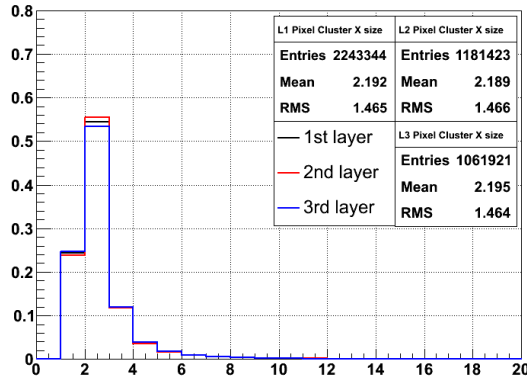


for Phase I 4 layers
Using Minbias MC

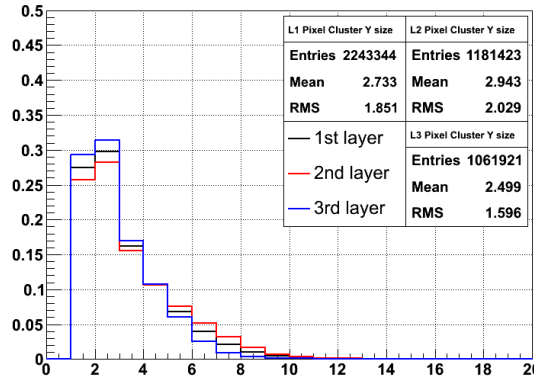
Pixel Cluster size comparison using ZEE MC

NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)

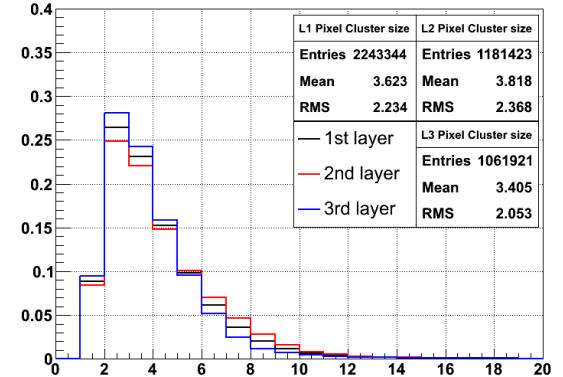
Number of Pixel Cluster X size



Number of Pixel Cluster Y size

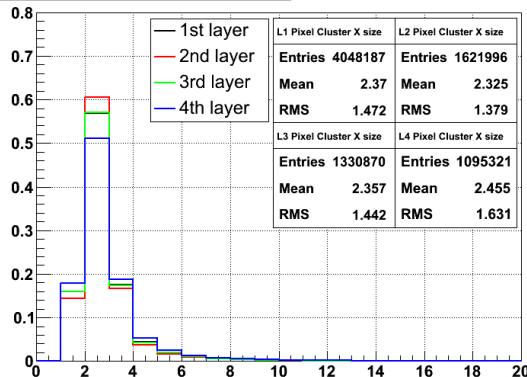


Number of Pixel Cluster size

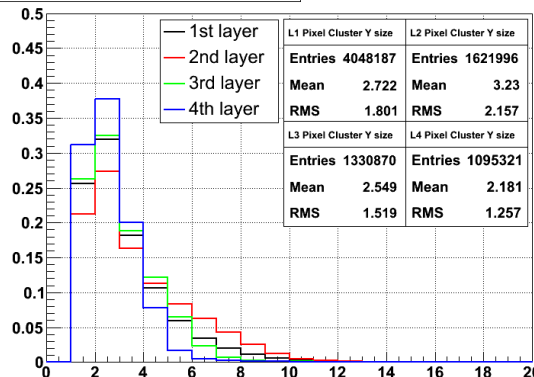


NO PILE-UP, ZEE Current MC

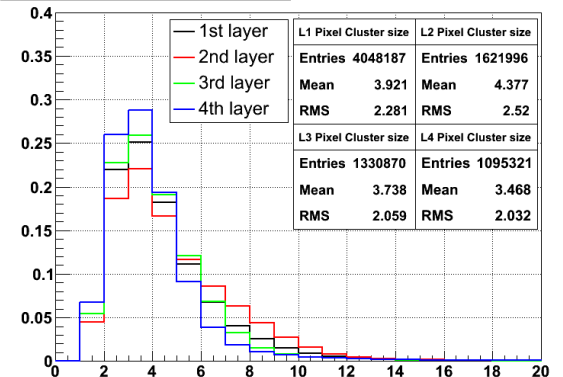
Number of Pixel Cluster X size



Number of Pixel Cluster Y size



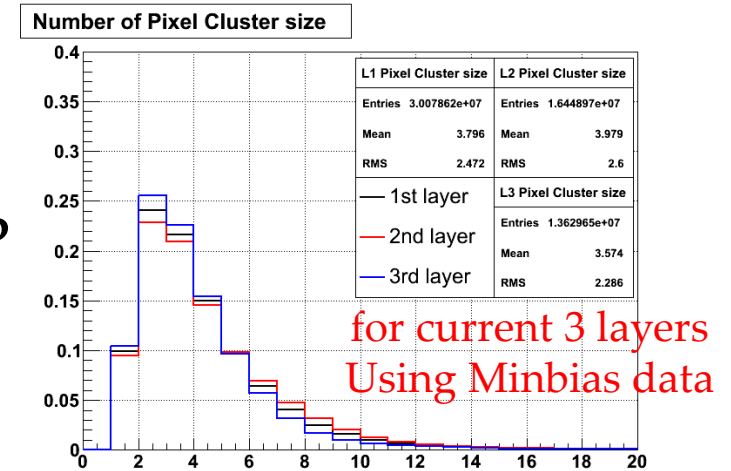
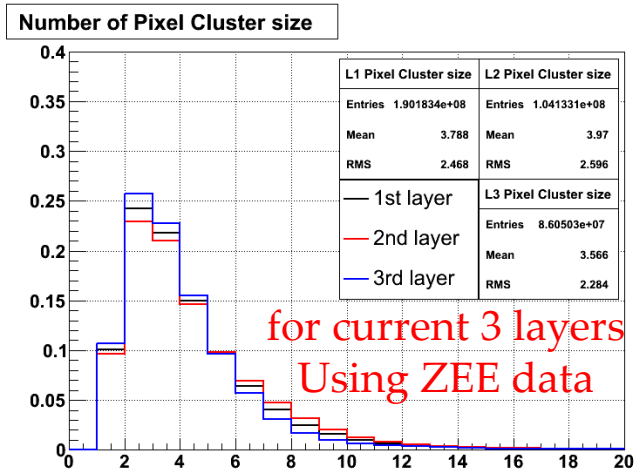
Number of Pixel Cluster size



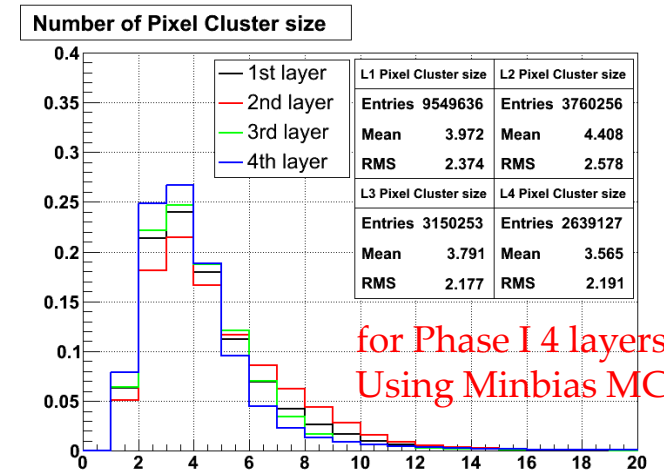
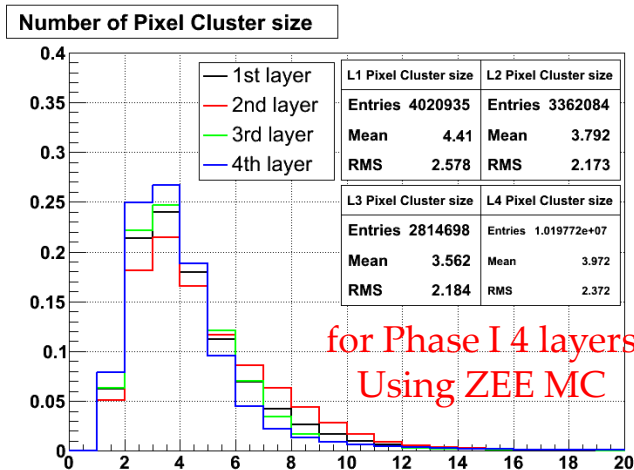
NO PILE-UP, ZEE Phase I MC

Pixel Cluster size comparison using DATA&MC

NOW: 3 layers (8 TeV) vs. PHASE I: 4 layers (14 TeV)



~10 PILE-UP



50 PILE-UP