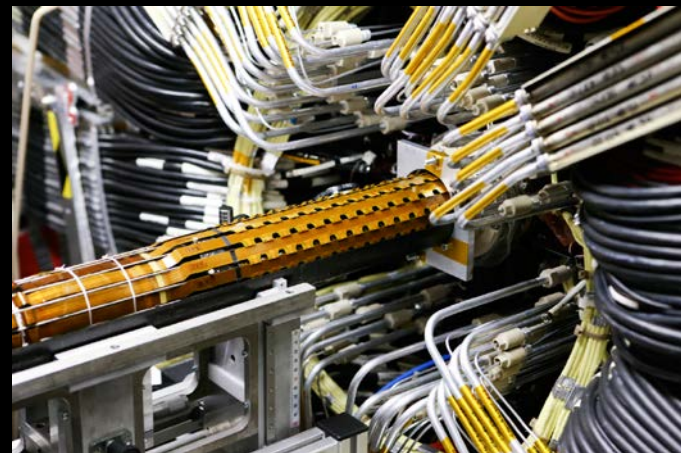


Improvements to ATLAS Track Reconstruction for Run II

What's new?

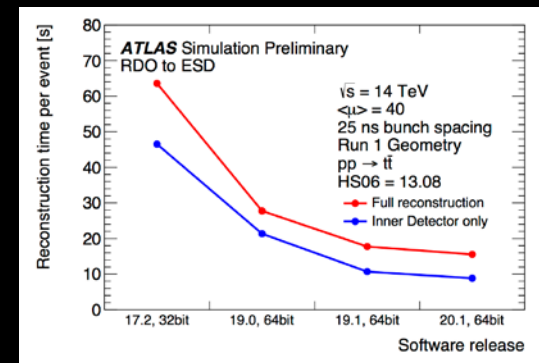
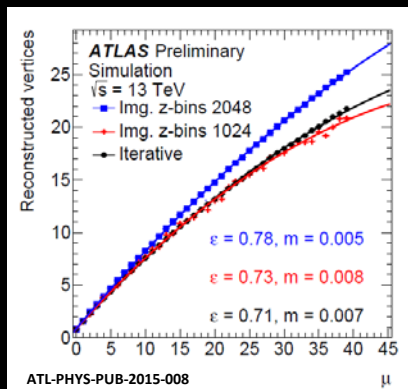
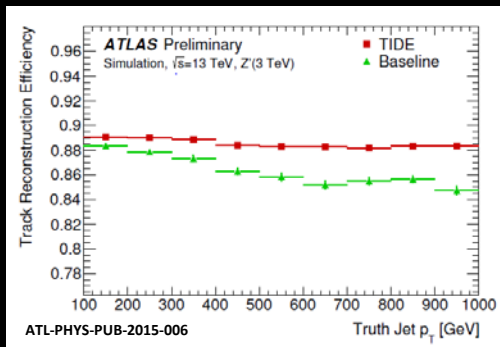
Improved Inner Detector to cope with new experimental conditions of the Run-II LHC (13 TeV center of mass energy, potentially higher pile up, high radiation dose):

- **Insertable B Layer (IBL)**, a fourth layer of Pixel positioned at ~ 3 cm from the beam line
- **Smaller Beam Pipe** coupled with the IBL



What have we done during LS1?

- Strong software campaign to speed up the reconstruction \rightarrow **execution time improved by a factor of four!**
- optimise **track and vertex reconstruction** algorithms to be working also in dense environments

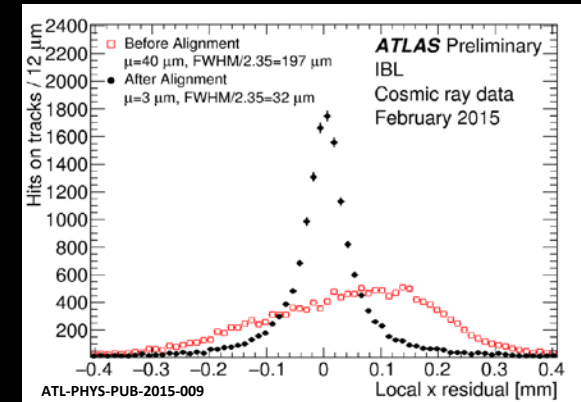
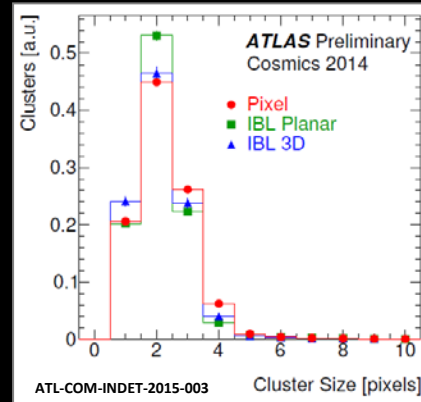


Improvements to ATLAS Track Reconstruction for Run II

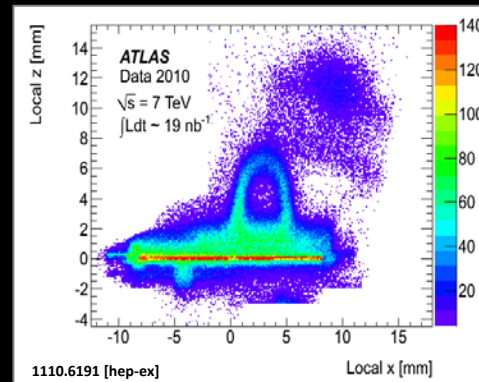
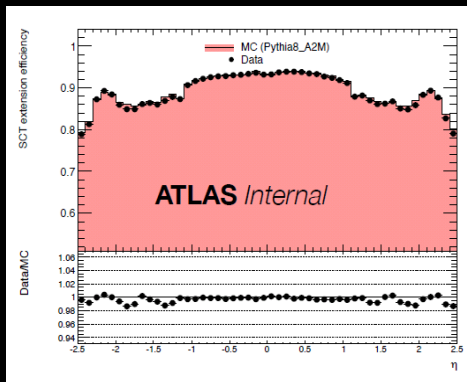
What are we doing now?

- Re-commission a complex detector to the same high-quality standards achieved in Run-I

- Impressive amount of work on cosmics to:
 - study the features of the IBL
 - optimize the detector response
 - first cosmic-data based alignment



- Evaluate the impact of the new material distribution within the Inner Detector



For more details... see the poster!

