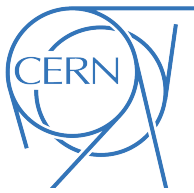


Plots approval request for ICHEP 2014 Conference

**Title of talk: The Pixel Detector of the ATLAS
Experiment for the Run2 at the Large Hadron Collider**

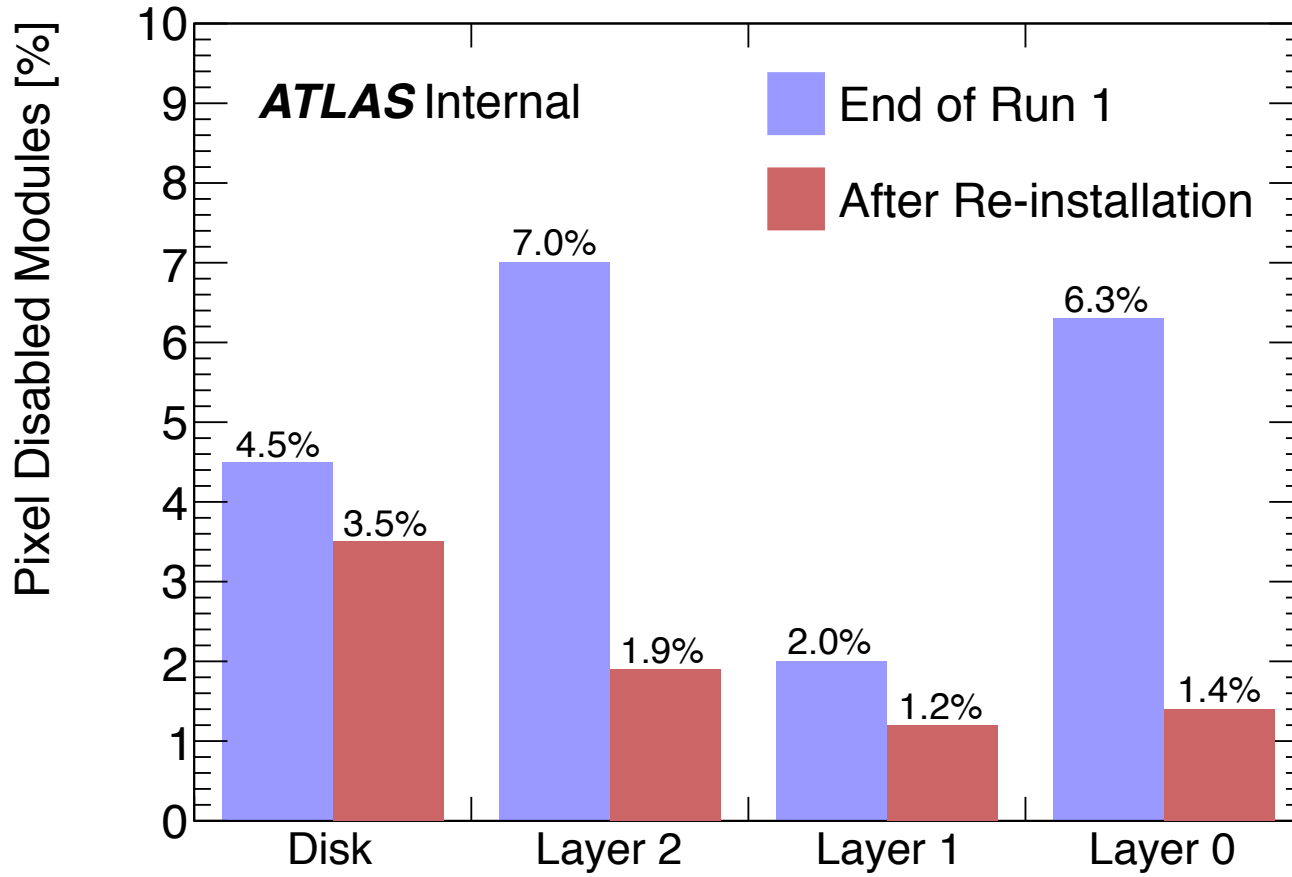
Beatrice Mandelli
CERN, University of Oslo

CERN, 18 June 2014

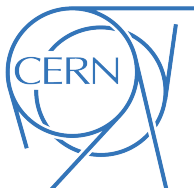


Pixel Disabled Modules by Layer

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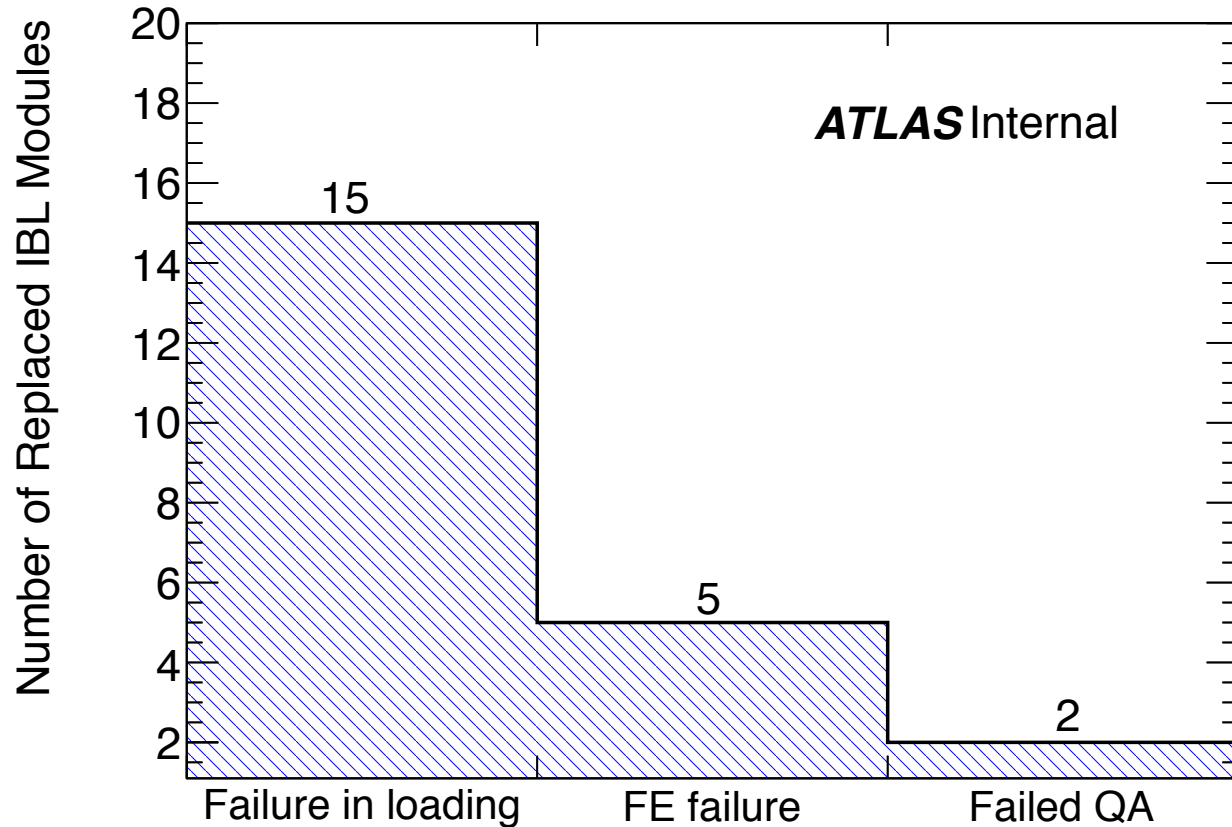


Percentage of disabled modules at the end of Run 1 and after the re-insertion of Pixel Detector into the ATLAS Experiment for disk and three layers.



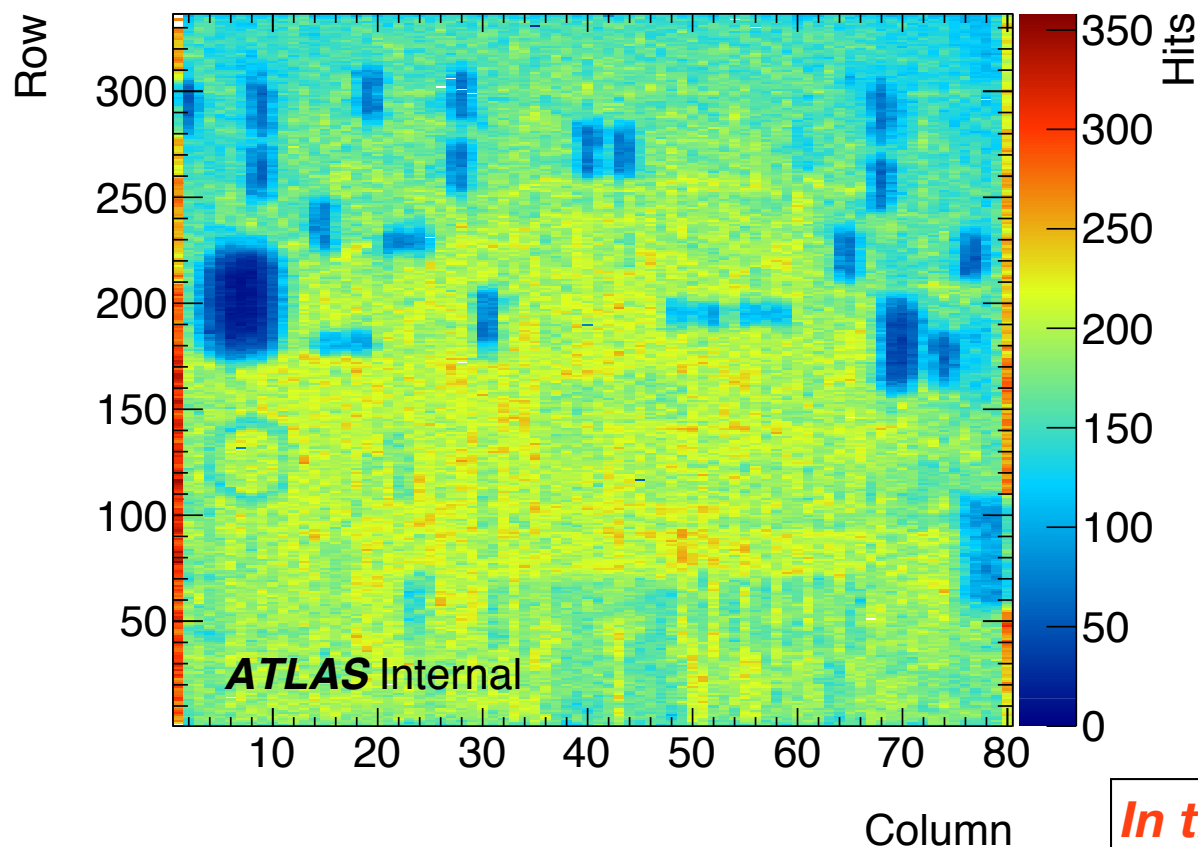
Reworked modules

Approval Request



Number of modules replaced divided by category. Reworks were mainly motivated by failures during the loading or FE failures during the early testing. 2 modules were replaced after the stave QA due to some failing registers.

The total number of loaded modules is 400 (240 planar + 72 FBK + 88 CNM)
6 modules replaced "after DSF" NOT included in the plot

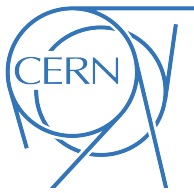


In the IBL QA note:

<https://cds.cern.ch/record/1701997>

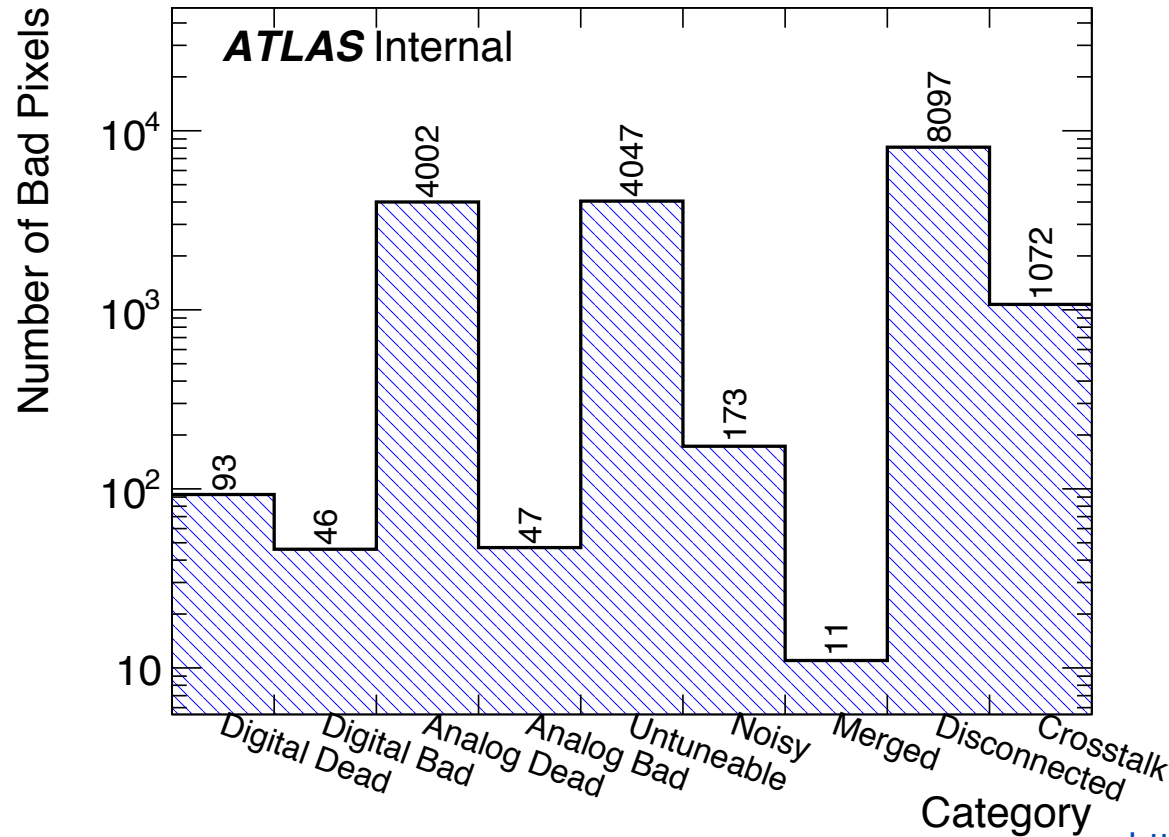
Example of a source scan hit map.

Regions with a lower number of hits are clearly visible and match precisely the areas where passive components are mounted on the module flex PCB. Each normal pixel has around 150 to 200 hits while long pixels in the outer columns have nearly twice as many hits, which is expected due to their size. The difference in number of hits between working and not working pixels is large enough to readily identify dead and disconnected pixels.



Number of bad pixels by categories

Approval Request



In the IBL QA note:

<https://cds.cern.ch/record/1701997>

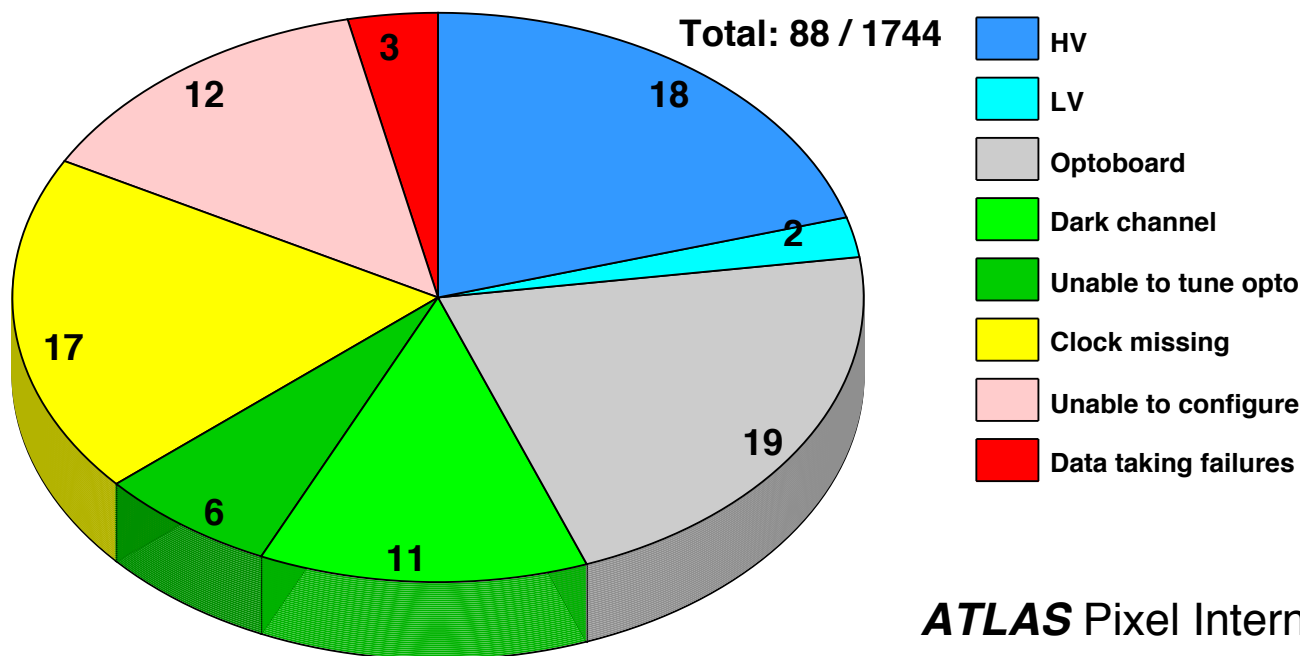
Number of bad pixels per failure category for 18 staves. About 50% of all failures are due to disconnected bumps, the other 50% are distributed between a pixel being analog dead or its tuning being impossible.

The total number of pixels for 18 staves is 15482880 meaning that, for example, the percentage of disconnected bumps for 18 staves is 0.052%.

Pixel Disabled Modules by Failure type (end of Run1)

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Disabled Modules by Failure Type (End of Run1)



ATLAS Pixel Internal

(B-Layer disabled modules: 18 / 286)

Number of disabled modules of the Pixel Detector at the end of Run1 classified by the type of the failure.