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New Clustering in TBMon2 for Sensors with Modified Pixel Implantations

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In phase II the LHC will be upgraded to the High Luminosity LHC. To fulfill the increased particle flux and higher instant luminosity, the ATLAS experiment will be equipped with a new Inner Tracker (ITk). Because of the close position to the beam line, the pixel sensors of the ITk are exposed to high radiation.
Planar n-in-n silicon sensors with different pixel implantations have been designed and one prototype sensor is artificially irradiated to simulate the radiation damage.
The efficiency of the different pixel designs are studied by analyzing test beam data with the software framework TBMon2. To reduce the computing time and to allow the analysis of irradiated sensors, a new clustering for TBMon2 has been developed. The new clustering and the special implementation of the sensors is presented in this talk.

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