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Software Implementation for the Characterization of Silicon Pixel Detectors KYLE MILLER¹, Texas A&M University, Cyclotron Institute, RI-CARDO EUSEBI, Texas A&M University — Pixel and Silicon-strip detectors are now a fundamental component for the detection, identification, and characterization of particles in nuclear and particle physics. They are used for beam diagnostics, for measurements of energy lost by electrons, for full-energy measurements of alphas and protons and heavy nuclei. The pixel and strip detectors are usually the most complex, sensitive, and expensive system in multi-million dollar detectors such as the ones in the Relativistic Heavy Ion Collider at Brookhaven. This poster describes the development of a characterization for pixel and strip detectors in clean room at Texas A&M University. As a first step we describe the quantities to be measured for a full characterization of the pixel sensor, the identification of the needed electronic circuitry and the logic behind the control and readout of the system as a whole. The second stage shows the analysis of the obtained results from a set of next-generation radiation-hard pixel sensors.

¹REU student from Florida A&M University

Kyle Miller Texas A&M University, Cyclotron Institute; Florida A&M University

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