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Front-end Electronics for the New Small Wheel of the ATLAS Muon Spectrometer MICHELLE SOLIS, University of Arizona, ATLAS COLLABORATION — The HL-LHC (high luminosity Large Hadron Collider) will increase the LHC luminosity by a factor of 5-7. This will extend the discovery reach for beyond-the-Standard Model physics and allow precision measurements of Higgs boson properties. However the higher luminosity will also stress the trigger and performance of the ATLAS experiment. An upgrade to the ATLAS Muon Spectrometer is the New Small Wheel (NSW), which will significantly improve muon triggering capabilities and preserve the performance of the muon measurements at increased luminosity in the forward region. Two new detector technologies, Micromegas detectors and small-strip Thin Gap Chambers will be used in the NSW. Front end electronics for the Micromegas detectors, which use several custom ASIC's in order to survive the high radiation environment, are being developed and tested. The physics motivation for the NSW will be discussed. A short technical description of the front-end boards will be given. Tests and results on the production design front end boards will be presented.

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