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Building ATLAS' Phase-II all Silicon Inner Tracker for High-Luminosity LHC[1] PRAJITA BHATTARAI, Brandeis University — In order to improve the chances of discovering new physics, the Large Hadron Collider at CERN will be upgraded to higher luminosities beginning in 2023. The upgrade poses two challenges to ATLAS' current inner tracking detector: heightened detector occupancy and radiation damage. To address these challenges, a new tracking detector must be built. The new inner detector, called the Inner Tracker, will be made of silicon pixels and micro-strips detectors. At Brookhaven National Lab, the Stave Assembly group has been building the initial prototypes of the Inner Tracker's barrel detector base unit staves and testing their thermomechanical properties. This talk focuses on assembly setup and process used to build each stave. Half of the barrel staves of the ATLAS' Inner Tracker will be built at Brookhaven using this process.

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