

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

US ATLAS ITk Stave Assembly: Building and Testing the first Prototypes¹ LAURA BERGSTEN, Brandeis University, ATLAS COLLABORATION — The ATLAS detector is an advanced particle detector which operates on the Large Hadron Collider (LHC), which collides protons at 14 TeV in energy to discover new fundamental particles and measure their properties. In 2025 the LHC will near double the rate of collisions and become the High-Luminosity LHC (HL-LHC). Because of this, the ATLAS Inner Detector will be replaced entirely with the Inner Tracker (ITk) to cope with the increased pile-up, track density, and radiation dose. In the barrel regions, the ITk consists of a 4-layer Strip detector surrounding a 5-layer Pixel detector. The Strip detector layers consist of 392 staves, half of which will be built at Brookhaven National Laboratory (BNL). These staves are composed of carbon composite mechanical support and cooling structures that each will be mounted with 28 silicon modules. In my talk I will describe the current status of stave assembly at BNL including the most recent results on module positioning, gluing, and surveying the first thermomechanical and electrical prototypes. I will summarize the latest results from surveying our completed stave.

¹US Department of Energy: SCGSR Fellowship, Brookhaven National Laboratory

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Date submitted: 04 Jan 2018

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