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Electrical and functional performance of the first full loaded ITk Strip stave at Brookhaven National Laboratory FRANCESCA CAPOCASA, Brandeis Univ, ATLAS ITK STRIP COLLABORATION — The ATLAS experiment is currently preparing for an upgrade of the inner tracking detector for High-Luminosity LHC operation, scheduled to start in 2027. The new detector, known as the Inner Tracker or ITk, employs an all-silicon design with five inner Pixel layers and four outer Strip layers. The staves are the building blocks of the ITk Strip barrel layers. Each stave consists of a low-mass support structure which hosts the common electrical, optical and cooling services as well as 28 silicon modules, 14 on each side. The first pre-production electrical stave was assembled at BNL in December 2019. To characterize the stave, a set of electrical and functional measurements have been performed both at room and at cold temperature. In this talk I will present the methods used to characterize this stave with particular focus on noise studies.

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