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[B09] The ATLAS ITk Strip Detector System for the Phase-II LHC Upgrade

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The ATLAS experiment at the Large Hadron Collider (LHC) is currently preparing for an upgrade of the inner tracking detector for High-Luminosity LHC operation, scheduled to start in 2027. The new detectors must be faster and they need to be more highly segmented. The sensors used also need to be far more resistant to radiation, and they require much greater power delivery to the front-end systems. At the same time, they cannot introduce excess material which could undermine tracking performance. 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. This contribution focuses on the Strip region of the ITk. Staves, in the central region (barrel), and Petals in the forward regions (End-Caps), are the building blocks of the ITk Strip layers. They consist of a low-mass support structure which hosts the common electrical, optical and cooling services as well as a various number of modules: the smallest functional units of the ITk Strip Detector.

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