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Development of the ABCStar ASIC for the ATLAS Silicon Strip Upgrade

The ATLAS experiment will use an all-silicon tracker in the Phase II upgrade for the HL-LHC collider at CERN. For the Silicon Strip detector of the Inner Tracker, a new generation of front-end readout ASIC ABCStar is under design. This chip provides all functions required for processing the signals from 256 strips of a silicon strip detector employing the binary readout architecture. In order to meet the new requirements of higher trigger rates and lower readout latency, the ABCStar differs from ABC130 and its predecessors. We summarize the status of this work and present the new features of the chip.

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