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Test beam measurements of AC-LGAD sensors from HPK and BNL

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Tracking at future hadron colliders will require sensors that achieve precise spatial and temporal resolution simultaneously. AC-coupled Low Gain Avalanche Detectors (AC-LGADS) are a promising candidate technology, combining the precision timing achieved in LGADs with highly granular readout. We present results from a 2021 test beam campaign to characterize AC-LGAD prototypes produced by Hamamatsu and by Brookhaven National Laboratory using the 120 GeV proton beam at Fermilab. In particular we demonstrate the spatial and time resolutions provided by these sensors, and present a study of key design parameters that determine the signal properties.

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No, this is an entirely new submission.

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