



Contribution ID: 3

Type: **Contribution Talk**

Fast Timing With Silicon Carbide Low Gain Avalanche Detectors

Tuesday, 29 November 2022 16:20 (20 minutes)

4H-Silicon Carbide, when considered as a material for the fabrication of Low Gain Avalanche Detectors for particle timing and position measurement, offers potential advantages over Silicon, including faster response and higher temperature operation. We discuss an ongoing study of this material aimed at the fabrication and test of prototype fast timing sensors. Recently we have fabricated our first devices and will present preliminary results on their behavior. This work is well aligned with technical directions identified in the recent Department of Energy study, “Basic Research Needs for High Energy Physics Detector Research and Development”.

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Session Classification: WG1: Solid State Detectors and ASICs

Track Classification: WG1: Solid State Detectors and ASICs