



Contribution ID: 35

Type: **Talk**

Soft X-Ray Low Gain Avalanche Detectors with 55um pitch for Imaging Applications using Timepix4 ASIC

Friday 19 November 2021 09:10 (20 minutes)

The AC-LGAD technology has been shown to be a very promising technology within HEP due to its extremely good time resolution and 100% fill factor. This technology is proposed to be used with the Timepix4 ASIC for imaging applications using soft X-rays. The fabrication of these devices is underway. Simulation studies have been performed to optimize the technology for a 55um pixel pitch and a radiation damage study has been performed in order to understand the performance of these devices within HEP experiments and to study the surface damage effects for soft-x-ray detection.

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Session Classification: Pixel Sensors and Monolithic Devices