



Contribution ID: 8

Type: **not specified**

[US] Deep Junction LGAD: a new approach to high granularity LGAD

Thursday 4 June 2020 15:40 (20 minutes)

Low Gain Avalanche Detectors (LGADs) are silicon detectors with modest internal gain (up to ~ 50) that allows the sensor to be very thin (20-50 μm). LGADs are characterized by an extremely good time resolution (down to 17ps), a fast rise time ($\sim 500\text{ps}$) and a very high repetition rate ($\sim 1\text{ns}$ full charge collection). In a broad array of fields, including particle physics (4-D tracking) and photon science (X-ray imaging), LGADs are a promising R&D path. However, due to structures required to provide electrostatic isolation between LGAD pixels, the granularity of production-level devices is limited to the $1\times 1\text{ mm}^2$ scale. However applications in particle physics and photon science demand granularity scales of $100\times 100\text{ }\mu\text{m}^2$ or better. Several promising approaches to improve this current limitation of LGADs are currently in R&D status. In this talk, we'll report an updated on a completely new idea involving a buried gain layer to overcome the current granularity limit: the DJ-LGAD.

Primary authors: SEIDEN, Abraham (University of California,Santa Cruz (US)); Prof. SCHUMM, Bruce Andrew (University of California,Santa Cruz (US)); GEE, Carolyn (University of California,Santa Cruz (US)); PADILLA, Rene (UC Santa Cruz); Dr MAZZA, Simone Michele (University of California,Santa Cruz (US)); ZHAO, Yuzhan (University of California,Santa Cruz (US)); SADROZINSKI, Hartmut (University of California,Santa Cruz (US))

Presenter: ZHAO, Yuzhan (University of California,Santa Cruz (US))

Session Classification: LGAD