Contribution ID: **53** Type: **not specified**

Research on LGAD with TCT and laser beam from ELI: Observing the changes in charge transport and in signal formation in Pad and Interpad regions as function of varied initially generated charge density

Thursday 1 December 2022 16:00 (20 minutes)

In this talk we present the results from our study where different regions of segmented LGAD are illuminated with femtosecond laser from ELI Beamlines: pad, interpad and ring. To ensure the different initial conditions in regard to charge density (initially generated), the laser power has been varied. The signal shape from pad was compared to the signal shape from interpad (gain to gain distance) as function of applied bias and as function of initially injected charge density (through single photon absorption). We have been focused on bias up to 400 V. This way we reduced the impact of leakage current on results. Among results that will be shown, the observations such as plasma effects and its formation in both, pad and interpad will be discussed too. The study has been performed at ELI Beamlines on an irradiated FBK UFSD W18 (Carbon enriched)sample,

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Session Classification: Low Gain Avalanche Detectors