Contribution ID: **112** Type: **Oral**

Annealing and Characterization of Irradiated Low Gain Avalanche Detectors

Wednesday 27 February 2019 11:50 (20 minutes)

Low Gain Avalanche Detectors are a promising technology in the field of ultra fast timing detectors. Studies of the radiation hardness of LGADs have raised questions about the relation between the onset of multiplication and the depletion of the amplification layer.
To address these questions and to investigate the change of gain and the electric field after irradiation and annealing, LGADs were irradiated with 24 GeV/c-protons to a fluence of 1e14 neq/cm² and annealed at 60℃. TCT, edge-TCT, IV and CV measurements were carried out after consecutive annealing steps. After a reduction of gain after irradiation, no effect of annealing was observed.
The onset voltage of charge multiplication measured with TCT changes with annealing and is believed to be related to a change in the electric field profile inside the bulk of the sensor.

Primary author: WIEHE, Moritz Oliver (Albert Ludwigs Universitaet Freiburg (DE))

Co-authors: VENTURA BARROSO, Ana (University of Barcelona (ES)); FERNANDEZ GARCIA, Marcos (Universidad de Cantabria (ES)); MOLL, Michael (CERN); Dr OTERO UGOBONO, Sofia (Universidade de Santiago de Compostela (ES)); PARZEFALL, Ulrich (Albert-Ludwigs-Universitaet Freiburg (DE))

Presenter: WIEHE, Moritz Oliver (Albert Ludwigs Universitaet Freiburg (DE))

Session Classification: Session 9: LGAD (2)