

10th Beam Telescopes and Test Beams Workshop



Contribution ID: 47

Type: **Talk**

Electric field as a crucial parameter for LGAD's safe, danger and irreversible breakdown region: Highlighted outcomes from the sensor stability study using ELI SEB Femtosecond TEST Beam Station

Wednesday 22 June 2022 16:00 (20 minutes)

In this presentation we highlight the most significant outcomes from the systematic study of heavily Irradiated LGAD using the femtosecond laser test beam facility at ELI Beamlines. Instability and LGAD's deaths associated to Single Event Burnout (SEB) from Highly Ionising Particles (HIP) are tested. Questions such as what the safe margin for operation is; is the sensor mortality a threshold effect and whether some vendors already produced LGADs that when irradiated at critical ATLAS fluency of 2.5×10^{15} neq/cm² cope well with limits recently imposed by SEB, will be discussed. The impact of findings in the context of ETL (CMS) and HGTD (ATLAS) will also be presented.

Author: LASTOVICKA MEDIN, Gordana (University of Montenegro (ME))

Co-authors: KROLL, Jiri (Czech Academy of Sciences (CZ)); LASTOVICKA, Tomas (Czech Academy of Sciences (CZ)); KRAMBERGER, Gregor (Jozef Stefan Institute (SI)); REBARZ, Mateusz (Extreme Light Infrastructure); KROPIELNICKI, Kamil (Extreme Light Infrastructure); ANDREASSON, Jakob (Extreme Light Infrastructure)

Presenter: LASTOVICKA MEDIN, Gordana (University of Montenegro (ME))

Session Classification: Experiments