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Type: **Oral presentation**

Investigation of the properties of Thick-GEMs photocathodes by microscopic investigation with single photo-electrons

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Novel Cherenkov detector upgrades favour GEM and THick-GEM (THGEM) based MPGD systems. These detectors have reduced ion backflow, fast signal formation, high gain, and could suppress the MIP signals as well. Sources of concern are the possible inefficiencies of the photo-electron collection from the top of the THGEM and the local variation of the gain related to geometrical non-uniformity. The developed high resolution scanner[1] using a focused UV light gave the possibility to study single photo-electron response of MPGDs in the submillimeter scale. Revealing the microstructure of photo-efficiency and local gain provides a new tool to quantitatively compare different THGEM geometries and field-configurations, and thus optimize the detector parameters. The presentation describes the key elements of the scanning system and focus, in particular, on the microstructure evolution of different Thick-GEM configurations providing optimization recipes.

Talk on behalf of a Budapest-Trieste Collaboration

Registered

Yes

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Session Classification: Technological aspects and applications of Cherenkov detectors

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