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**Poster Session – Submission of Abstract**

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Title of the poster:

A new concept of  $\gamma$ -ray telescope. LArGO: Liquid Argon Gamma-ray Observatory

Abstract text:

LArGO (Liquid Argon Gamma-ray Observatory) consists of a new design for a  $\gamma$ -ray telescope, which exploits the original idea of using a Liquid Argon Time Projection Chamber (LAr-TPC) as tracker-converter.

Particle tracking in LAr-TPC can efficiently start since the primary photon vertex. Indeed, while in the present space telescopes the incident photon converts in a tungsten foil, which is a passive material, in a LAr-TPC this conversion happens in LAr itself, which is fully active. Therefore, a LAr-TPC can lead to an unprecedented angular resolution for a  $\gamma$ -ray telescope, leading to an improvement in sensitivity and most important disclosing the possibility to detect the polarization of  $\gamma$ -ray emission. In this poster are discussed the main concepts that are motivating the LArGO project.

Summary:

key words: Instrumentation – telescopes, detectors and techniques: gamma-ray telescope, liquid Argon TPC. High energy and particle astronomy – gamma-rays.