Contribution ID: 25

## Observing soft-spectrum gamma-ray sources with the future ALTO observatory

Wednesday 25 November 2020 10:00 (15 minutes)

Astrophysical jets in active galaxies and gamma-ray bursts (GRBs) accelerate charged particles, giving rise to fluxes of very-high-energy (VHE) gamma-rays. While observing high redshift GRBs on Earth, the photon spectrum gets softer at VHEs due to the extra-galactic background light (EBL) absorption. Additionally, detecting such VHE gamma-rays is a probe to search for axion-like particles and to test Lorentz invariance violation. ALTO is a R&D project for the design and prototyping of a very-high-energy (200 GeV - 100 TeV) gamma-ray observatory using particle detectors optimized to regularly monitor such distant soft-spectrum sources. In the R&D phase of ALTO, the expected detection performance on such targets is obtained using a dedicated simulation, reconstruction and analysis. I will present the status of the prototyping effort and the simulated performance of the large-scale ALTO array.

## **Abstract Track**

Astroparticle physics

Authors: SENNIAPPAN, Mohanraj (Linnaeus University); BECHERINI, Yvonne (Linnaeus University); PUNCH, Michael; THOUDAM, Satyendra (Radboud University); ERNENWEIN, Jean-Pierre (Groupe de Recherche en Physique des Hautes Energies (GRPHE)); Mr BYLUND, Tomas (Linnaeus University); KUKEC MEZEK, Gasper (Linnaeus University)

**Presenter:** SENNIAPPAN, Mohanraj (Linnaeus University)

Session Classification: Wednesday morning