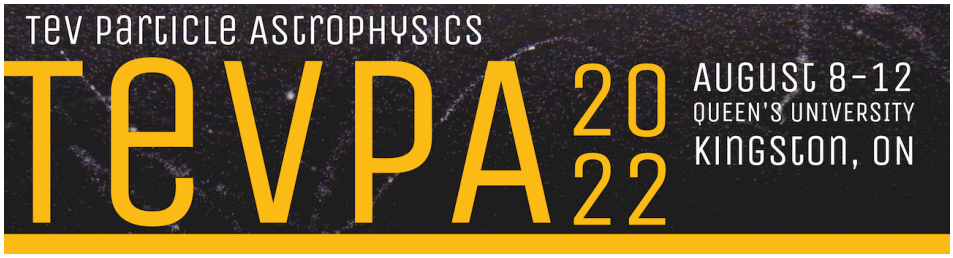

Contribution ID: **150** Type: **Parallel Talk**

A preliminary population study of gamma ray bursts detected in the very high energy domain

Thursday 11 August 2022 14:40 (20 minutes)

Gamma-ray burst (GRB) emission in the very high energy (VHE, E>100GeV) band has been discussed and theorized for many years, but has eluded for a long time the observations. Only in the last years the Cherenkov telescopes MAGIC and H.E.S.S. have unequivocally proven that VHE GRB afterglow radiation is produced up to a few TeV for at least a (sub-)class of GRBs. This newly opened TeV spectral window is providing unprecedented information on the physical processes involved and on several aspects of GRB afterglow physics, including particle acceleration mechanisms, and properties of the GRB environment. Modeling of multi-wavelength data performed with numerical code have been extensively used in order to probe such open questions of GRB afterglow physics. In this contribution we will address the question why these GRBs have been detected in the VHE domain, whether they have peculiar properties or they show some common behavior which may be at the basis of the production of TeV radiation. We will then show preliminary studies of the observed and the intrinsic properties of this first population of GRBs at VHE, highlighting their similarities and differences, and discussing how they compare to the whole population.

Collaboration name

Author: MICELI, Davide (University & INFN Padova)

Co-author: Ms NAVA, Lara (INAF - Osservatorio Astronomico di Brera)

Presenter: MICELI, Davide (University & INFN Padova)

Session Classification: Extragalactic Sources

Track Classification: Gamma Rays