

Development of a innovative electron-positron discrimination technique for space application: the EPSI project.

Friday 19 July 2024 09:35 (15 minutes)

One of the main goal of the next generation space experiments is to extend the measurement of cosmic positron in the TeV region: this will provide unique information related to dark matter indirect search and cosmic ray physics. The detection techniques currently in use are not suited to reach this energy region in a relatively short time scale.

An alternative method relies on the detection of synchrotron photons emitted by electrons and positrons as they travel within the geomagnetic field. To investigate this technique is the main goal of the Electron Positron Space Instrument (EPSI) project, an R&D that has been approved and financed in Italy as a “Research projects of relevant national interest” in September 2023. The detector consists of an large acceptance electromagnetic calorimeter and a large-area, low detection threshold X-ray detector array.

In this contribution we will present the current status of the EPSI project and next steps for the fulfillment of the project goals.

Alternate track

1. Astro-particle Physics and Cosmology

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Session Classification: Astro-particle Physics and Cosmology

Track Classification: 08. Astro-particle Physics and Cosmology