XII International Conference on New Frontiers in Physics
10-23 July 2023, OAC, Kolymbari, Crete, Greece

Contribution ID: **96** Type: **Talk**

Measurement of the energy spectra of proton, Helium and Boron cosmic-rays with CALET on the International Space Station

Tuesday, July 18, 2023 4:00 PM (20 minutes)

The Calorimetric Electron Telescope (CALET) is a cosmic-ray observatory operating since October 2015 aboard the International Space Station (ISS). The primary scientific goal of the CALET mission is to perform a high-precision measurement of the inclusive spectrum of cosmic electrons and positrons up to about 20 TeV, where the shape of the spectrum might indicate the presence of nearby cosmic-ray sources or dark matter signatures. The CALET mission is also able to investigate the mechanism of cosmic-ray acceleration and propagation in the Galaxy, by performing direct measurements of the energy spectra and elemental composition of cosmic-ray nuclei from H to Fe and the abundance of trans-iron elements, up to Zr (Z = 40), in the energy range reaching the PeV scale. Finally, CALET can monitor the gamma-ray sky up to about 10 TeV, search for signals from gravitational-wave event candidates, and observe gamma-ray burst events. The CALET detector, consisting of a charge detector, an imaging calorimeter and a total absorption calorimeter has a total thickness of about 30 radiation lengths at normal incidence. The instrument can achieve a clear separation between hadrons and electrons and between charged particles and gamma-rays. In this contribution we summarize the most recent results obtained from data processed since the beginning of the mission, by focusing on the measured spectra of cosmic-ray proton, Helium and Boron, the latter flux compared with that of Carbon to investigate the secondary-to-primary abundance ratio B/C.

Is this abstract from experiment?

Yes

Name of experiment and experimental site

CALET Collaboration

Is the speaker for that presentation defined?

Yes

Details

Name: Sandro Gonzi
Title: Dr
Institution name: University of Florence (Department of Physics and Astronomy), National Institute for Nuclear Physics INFN (Division of Florence), National Research Council CNR (Institute of Applied Physics IFAC)
Country: Italy
Webpage of institution: https://www.fisica.unifi.it/index.html?newlang=eng

Internet talk

Maybe

Author: Dr GONZI, Sandro (University of Florence (Department of Physics and Astronomy), National Institute for Nuclear Physics INFN (Division of Florence), National Research Council CNR (Institute of Applied Physics IFAC))

Presenters: Dr GONZI, Sandro (Università degli Studi di Firenze e INFN); Dr GONZI, Sandro (University of Florence (Department of Physics and Astronomy), National Institute for Nuclear Physics INFN (Division of Florence), National Research Council CNR (Institute of Applied Physics IFAC))

Session Classification: Cosmology, Astrophysics, Gravity, Mathematical Physics

Track Classification: Main topics: Cosmology, Astrophysics, Gravity, Mathematical Physics