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The CALorimetric Electron Telescope (CALET) space experiment for the direct measurement of high energy electrons in cosmic rays.

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The CALorimetric Electron Telescope (CALET) is a Japanese led international space mission by JAXA (Japanese AeroSpace Agency) in collaboration with the Italian Space Agency (ASI) and NASA. The apparatus was launched to the International Space Station on 19 August 2015. Its main objective is to explore the region above 1 TeV with precise direct measurements of the electron+positron spectrum, nuclei spectra from proton to iron and above up to several hundreds TeV and to detect gamma ray emissions up to 10 TeV with high energy resolution. These measurements are crucial to understand the acceleration mechanism(s) of galactic cosmic rays and to search for signals from dark matter and possible contributions from nearby astrophysical sources like pulsars. The instrument consists of a charge detection device composed of two layers of plastic scintillators, a finely-segmented sampling calorimeter with scintillating fibers (3 radiation lengths) and a homogeneous calorimeter made of PWO scintillating bars (27 radiation lengths). The calorimeter has the required depth, imaging capabilities and energy resolution for achieving an excellent separation between hadrons, electrons and gamma rays. In parallel to the calorimeter another instrument, the CALET Gamma-ray Burst Monitor (CGBM), operates as a gamma-ray burst monitor using two different kind of scintillators (LaBr 3 (Ce) and BGO) to detect photons from 7 keV to 20 MeV. From the first days of October 2015 CALET is in science operations mode for a first initial period of 2 years with a target of 5 years. In this work a review of the electron analysis will be discussed focusing on the electron/proton discrimination power estimated with different Monte Carlo simulations. Some published results about calibration and search for electromagnetic counterparts of the LIGO GW 151226 gravitational wave event will be presented too.

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