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Performance of the Spanish Infrared Camera onboard the EUSO-BALLOON (CNES) flight on August 24, 2014.

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The EUSO-balloon, pathfinder for the JEM-EUSO Space Mission, was launched during the night of August 24, 2014. The main aim of the flight was to test all the technologies developed for JEM-EUSO under very severe operating conditions (Stratosphere ~ 40 km altitude), partly representative of the working conditions in ISS. The IR camera onboard EUSO-Balloon is used to obtain the Cloud Top Height (CTH) and cloud coverage in the Field of View (FOV) by using two Long Wave InfraRed (LWIR) bands centered at 10.8 μm and at 12 μm . In order to achieve these objectives a precise control of all the components during the flight is mandatory. The present work is devoted to the evaluation of the spectral and angular response of the microbolometer and filters and a geometrical description of all the components of the IR camera to achieve the proper performances. Once the theoretical study is done, it has to be checked experimentally, determining the involved parameters that have to be taken into account. After this work, we will be able to calculate the CTH of all the clouds in the FOV of the IR camera.

Collaboration

JEM-EUSO

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