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Atmospheric effects on the ground-based calibration of orbital UV Telescopes

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One of the major issues in the detection of the UV yield of orbital UV telescopes is the optical calibration of the focal surface detector, which in turn requires advanced knowledge of the atmosphere in the FoV of the telescope. As such, we report here on the evaluation of the GLS as a ground-based optical system for the in-orbit calibration of orbital instruments such as the Mini-EUSO, JEM-ESUO and TUS orbital UV telescopes. Our study is done using GBSatCal (Ground-Based Satellite Calibration) software package, which has been designed specifically for this task. This package allows us to consider different types of radiation sources (e.g. lasers, Xe-flashers and high-power UV LEDs), of focal surface detector geometries and of atmospheric models (e.g. USAS 1976 and NRLMSISE-00), as well as to determine the optimal calibration geometry.

Collaboration

JEM-EUSO

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