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Calibration of the JEM-EUSO detector

In order to unveil the mystery of ultra high energy cosmic rays (UHECR's), JEM-EUSO (Extreme Universe Space Observatory on board of the Japan Experiment Module), launched ~2017, will observe extensive air showers induced by UHECR's from the International Space Station orbit with a huge acceptance. An accurate calibration of the JEM-EUSO instrument, which consists of Fresnel optics and a focal surface detector of 5000 MAPMTs, is very important to study the origin of UHECR's precisely. In this contribution, the calibration system before launch and on-orbit will be reported: the calibration before flight with integrating spheres, on-board calibration light source, and ground light source for on-orbit calibration from ground. We expect precise relative calibration at a few percent levels with several kinds of light sources and ~20% level absolute calibration using the moon.

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