

Contribution ID: 30

Type: **not specified**

EUSO-SPB –a stratospheric super-pressure balloon searching for UHECR

Wednesday, 6 July 2016 12:20 (20 minutes)

The EUSO-SPB (Extreme Universe Space Observatory - Super Pressure Balloon) is a fluorescence telescope at a stratospheric balloon with the main goal of detecting UV- light from Extensive Air Showers for the first time from (near) space. For this purpose it will employ a UV telescope consisting of three 1 m² Fresnel lenses focusing light on 2304 channels of multi-anode photomultipliers. The detector will utilize microsecond-scale exposures and an autonomous trigger to extensive air showers. The launch from Wanaka, New Zealand is scheduled for spring 2017. The flight should take at least 30 days with a possibility of extension to as much as 100 days. We aim at detecting of an order of 10 ultra-high energy cosmic ray events. The data will also provide detailed measurements of the night-time UV emission of the Earth and its atmosphere.

EUSO-SPB is a pathfinder experiment of the space based JEM-EUSO mission, which will be installed on the International Space Station in the future. Incorporating the same technology as the EUSO-SPB, but scaled to significantly larger dimensions, it will have an unprecedented coverage of the Earth's atmosphere. This should result in the identification of the extremely energetic cosmic rays sources, a crucial goal for this field of physics.

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Session Classification: Indirect Measurements of High Energy Cosmic Rays