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会場:コンベンションホール

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国際宇宙ステーションからの雷放電とスプライトの観測計画 Global Lightning and Sprite Measurements (GLIMS) from International Space Station

牛尾 知雄^{1*}, 佐藤 光輝², 森本 健志¹, 鈴木 睦³, 山崎 敦³, 高橋 幸弘², 芳原 容英⁴, 石田 良平⁵, 菊池 雅行⁶, 河崎 善一郎¹
Tomoo Ushio^{1*}, Mitsuteru Sato², Takeshi Morimoto¹, Makoto Suzuki³, Atsushi Yamazaki³, Yukihiro Takahashi², Yasuhide Hobara⁴, Ryohei Ishida⁵, Masayuki Kikuchi⁶, Zen-Ichiro Kawasaki¹

¹ 大阪大学, ² 北海道大学, ³ 宇宙航空研究開発機構, ⁴ 電気通信大学, ⁵ 大阪府立大学, ⁶ 極地研究所

¹Osaka University, ²Hokkaido University, ³JAXA, ⁴University of Electro-Communications, ⁵Osaka Prefecture University, ⁶NIPR

The Global Lightning and sprIte MeasurementS (GLIMS) on the International Space Station (ISS) is a mission to detect and locate optical transient luminous events (TLEs) and its associated lightning simultaneously from the non-sun synchronous orbit, and is scheduled to be launch from Japan in January, 2012 as part of the multi-mission consolidated equipment on Japanese Exposure Module (JEM). Our mission goals are (1) to detect and locate lightning and sprite within storm scale resolution over a large region of the Earth's surface along the orbital track of the ISS without any bias, (2) to clarify the generation mechanism of sprite, and (3) to identify the occurrence conditions of TLEs. To achieve these goals, two CMOS cameras, six Photometers, VLF receiver, and VHF interferometer with two antennas, are installed at the bottom of the module to observe the TLEs as well as causative lightning discharges at nadir direction during day and night time. Though the luminous events so-called sprite, elves and jets have been investigated by numerous researchers all over the world based mainly on the ground observations, some important problems have not been fully understood yet such as generation mechanisms of columniform fine structure and horizontal offset of some sprites from the parent lightning discharges. In the JEM-GLIMS mission, observations from our synchronized sensors are going to shed light on above-mentioned unsolved problems regarding TLEs as well as causative lightning discharges. In this presentation, the scientific background, instrumentation, project summaries are given.

キーワード: 雷, スプライト, 宇宙ステーション

Keywords: Lightning, Sprite, ISS