

R006-12

C会場：11/5 PM2 (15:45-18:15)

17:00~17:15

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The LAMP sounding rocket mission; in-situ observations of microburst electron precipitations associated with pulsating aurorae

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On March 5th, 2022, NASA's LAMP (Loss through Auroral Microburst Pulsations) sounding rocket was launched from Poker Flat Research Range (PFRR), Alaska, USA. One of the scientific objectives of LAMP is to reveal a relationship between the microburst of relativistic energy electrons precipitating into the ionosphere and modulations of optical auroral emissions in the pulsating aurora. We, Japanese team, provided the PARM2 (Pulsating AuroRa and Microburst 2) instrument suite for LAMP as onboard scientific hardware. PARM2 consists of four instruments; HEP (SSD based high-energy electron detector), MIM (a magnetometer using the magneto-impedance effect), and AIC1/AIC2 (two auroral imaging cameras installed on a despun table which cancels spinning motion of the rocket). We also provided ground-based supporting observations at three sites; Venetie, Fort Yukon, and PFRR, which contained several high-speed auroral imaging systems including operations at the site. By using these ground-based supporting observations, LAMP successfully hit the pulsating auroral patches. And then, HEP detected the microburst electron precipitations in 100 keV range in conjunction with intensification of auroral emissions at geomagnetic footprint. AIC captured pulsating auroral patches with sub-second modulations. And MIM detected magnetic field fluctuations which might be due to auroral current system. In this presentation, we will report on an overview of the LAMP mission and its observations.