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[EE] Evening Poster | P (Space and Planetary Sciences) | P-EM Solar-Terrestrial Sciences, Space Electromagnetism & Space Environment

## [P-EM12]Space Weather, Space Climate, and VarSITI

convener:Ryuho Kataoka(National Institute of Polar Research), Antti A Pulkkinen (NASA Goddard Space Flight Center), Kanya Kusano(名古屋大学宇宙地球環境研究所, 共同), Kazuo Shiokawa(Institute for Space-Earth Environmental Research, Nagoya University)

Thu. May 24, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Past, Present, and Future of Solar-Terrestrial Environment is the keynote of this session. We share the latest scientific papers to understand how the solar-terrestrial environment changes in various time scales, and discuss the necessary international collaboration projects associated with VarSITI. More specifically, welcomed papers include space climate studies using tree rings and ice cores; cutting-edge observational and modeling studies of geospace, heliosphere and the sun; simulation and statistical studies to predict the future space weather and space climate.

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## [PEM12-P10]Aurora forecast based on AL index prediction

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Keywords:aurora forecast, AL index

In this poster, we present an aurora forecasting system that has been developed for the general public. The aurora appearing in the night sky in the auroral region has different luminance and color depending on the geomagnetic activity. It is known that the level of geomagnetic activity changes depending on the state of the solar wind near the earth. In this study, we first developed a method to predict the Aurora electrojet Lowest (AL) index a few hours ahead by multivariate autoregressive method using real time observation data of solar wind. Furthermore, we investigated correlation between AL index and aurora luminosities for each wavelength (557.7 nm, 630.0 nm, 427.8 nm) observed by ground-based all-sky camera. We found that AL index can be classified into 4 levels by color and luminosity (0: invisible, 1: green only, 2: green and red, 3: green, red and blue/pink). By combining these results, it is possible to forecast the luminance and color of aurora in a few hours by the predicted AL index. The aurora forecast calculated by this method will be distributed from the website in the future.