R005-11
A 会場 ：11/24　PM2 （15:30-18:15）
16:15〜16:30

昭和基地上空 100-170km に観測された地磁気静穏時のスポラディック Ca^+ 層

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Sporadic Ca^+ layer observed around 100-170 km over Syowa Station during geomagnetic quiet condition

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The wind shear theory is widely accepted as the mechanism of the formation of the sporadic E layer (EsL) in the mid-latitudes. Among the ions that drift vertically due to the vertical shear of neutral horizontal winds, the long-lived ions that form the core of the EsL are metal-atom ions, such as Ca^+, Fe^+, Na^+ etc., supplied by meteoroids to the MLT region. On the other hand, in the high latitude, especially auroral oval zone, the EsL occurred with geomagnetic and auroral activity is known. However, it is unknown if there is a EsL during geomagnetic quiet condition, and a contribution of the metal-atom ions to formation and lasting of the EsL as in the mid-latitude.

A resonance scattering lidar developed by National Institute of Polar Research (NIPR) was installed at Syowa (69S, 40E), Antarctic in 2017 and observed Ca^+ density profiles in 2017 and 2018. A Ca^+ thin layer descending from ~170 to 100 km was observed on Sep. 13 in 2017 that geomagnetic activity was quiet. At the same time, a weak EsL observed with the ionozonde at Syowa operated by National Institute of Information and Communications Technology (NICT). In this presentation, we will show a relationship between Ca^+ thin layer and the EsL and discuss contributions of vertical shear of neutral wind.