

R005-P16

ポスター 3 : 9/26 AM1/AM2 (9:00-12:30)

## 昭和基地で観測された Ca<sup>+</sup> 層とスποラディック E 層の比較

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## Comparison between the Ca<sup>+</sup> and the sporadic E layers observed at Syowa

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Sporadic E (Es) layer is the thin layer of enhanced electron density forms at the height between 90 and 120 km in the mesosphere and lower thermosphere (MLT) region. The wind shear theory is widely accepted as the mechanism of the formation of the Es layer in the mid-latitudes and the daytime Es has usually higher plasma density than the nighttime Es. 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 Es layer are metal-atom ions supplied by meteoroids to the MLT region. On the other hand, the Es layer in the auroral zone is usually seen during the night hours and has been mostly associated with magnetic and auroral activity. It is known that the value of foEs obtained by ionosonde observation increase with the motion of an auroral arc or band from a low elevation angle to a position near the zenith. However, it is unknown if there is a contribution of the metal-atom ions to formation and lasting of the Es in the auroral zone as in the mid-latitude. A resonance scattering lidar developed by the National Institute of Polar Research (NIPR) was installed at Syowa (69S, 40E), Antarctic in 2017 and successfully obtained Ca<sup>+</sup> density profiles 6 nights in total in Spring of 2017 and 2018. In this presentation, we will discuss a relationship between a metal-atom ion and the Es layer by comparing the temporal variation of Ca<sup>+</sup> density with foEs data obtained by the NICT ionosonde at Syowa Station.