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16:30〜16:45

EISCAT レーダーで観測された地磁気静穏時の昼側極域電離圏変動の特徴について

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Features of disturbances in the dayside polar ionosphere during geomagnetically quiet periods observed with the EISCAT radar

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We have been conducting dayside ionospheric observations using the EISCAT radar system since 2011. We have focused our scientific attention on ionospheric fluctuations/disturbances in the polar cap region. The EISCAT observations have revealed that the ionosphere in the polar cap region (or at higher latitudes than the auroral zone) shows some fluctuations not only during periods of disturbances such as geomagnetic storms, but also during times of geomagnetically quiet. The fluctuations, which seem to be caused by the lower atmospheric phenomena, were also observed in the polar cap ionosphere. Since there have been few observations of the ionosphere and thermosphere in the polar cap region, there are many things that we do not fully understand. Further studies are needed into the basic structure and variations of the ionosphere in the polar cap region during geomagnetically quiet periods. In this presentation, we will show some features of disturbances in the dayside polar ionosphere at higher latitude than the auroral zone observed with the EISCAT radar system.

我々の研究グループでは、EISCAT 特別実験を実施し、昼側極域電離圏について調べてきた。特に、電離圏・熱圏観測の少ない極冠域での電離圏変動に注目し、地磁気静穏時、擾乱時、太陽活動極小期、極大期での変動の成因の理解を目標としている。これまでの観測では、地磁気擾乱時に限らず、地磁気静穏時にも顕著な電離圏変動が現れる場合があることがわかった。例えば、短時間でのイオン温度の上昇や、高速イオン流などである。また、下層大気からの影響とみられる変動も検出されている。本発表では、これまでの EISCAT 観測から得られた、地磁気静穏時の昼側極域電離圏の特徴的な変動のいくつかを紹介する。