R005-22
B 会場 ：11/5　AM2 （10:45-12:30）
11:00〜11:15

ISS-IMAP/EUVI データから再構成した夜側電離圏 O+ 密度分布

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O+ distribution in the nightside ionosphere reconstructed from ISS-IMAP/EUVI data

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The International Space Station-Ionosphere-Mesosphere-Atmosphere Plasmasphere cameras (ISS-IMAP) mission operated a suite of imagers on board the International Space Station (ISS). One of the imagers, EUVI-B, was designed to observe extreme ultraviolet (EUV) emissions at 83.4 nm scattered by O+ ions. However, our previous study (Nakano et al., 2021) has concluded that EUVI-B mostly observed 91.1 nm emission due to recombination between O+ ions and electrons. This means that the EUV intensity observed from EUVI-B is approximately proportional to the line-of-sight integral of the square of O+ density. The EUVI-B data are thus useful for tomographic reconstruction of O+ distribution in the nightside ionosphere where EUVI-B was operated.

In this study, we have reconstructed O+ distribution in the nightside ionosphere from the EUVI-B data. We integrate multiple images acquired in each ISS orbit to obtain the three-dimensional O+ distribution in the vicinity of the orbit. Combining the reconstruction results for multiple ISS orbits, we obtain the temporal evolution of the ionospheric structure such as the equatorial anomaly. We will demonstrate some results of the reconstruction and discuss their scientific implications.