

R010-12

B 会場 : 11/25 AM1 (9:15-10:45)

10:15~10:30:00

#片岡 龍峰¹⁾, Bhosale Nilam¹⁾, Nakano Shinya²⁾, Fujita Shigeru²⁾, Nakamizo Aoi³⁾, Sachin Reddy⁴⁾, Bag Tikemani⁵⁾, Yukimatu Akira⁶⁾, Tanaka Takashi⁷⁾

⁽¹⁾OIST, ⁽²⁾統計数理研究所, ⁽³⁾情報通信研究機構, ⁽⁴⁾NASA/JPL, ⁽⁵⁾千葉大学, ⁽⁶⁾国立極地研究所, ⁽⁷⁾九州大学

Subauroral Joule-heat estimate using SuperDARN data assimilation via AI emulator of REPPU global MHD simulation

#Ryuho Kataoka¹⁾, Nilam Bhosale¹⁾, Shinya Nakano²⁾, Shigeru Fujita²⁾, Aoi Nakamizo³⁾, Reddy Sachin⁴⁾, Tikemani Bag⁵⁾, Akira Yukimatu⁶⁾, Takashi Tanaka⁷⁾

⁽¹⁾OIST, ⁽²⁾ISM, ⁽³⁾NICT, ⁽⁴⁾NASA/JPL, ⁽⁵⁾Chiba Univ., ⁽⁶⁾NIPR, ⁽⁷⁾Kyushu Univ.

In this study, we estimate the time evolution of the Joule heating map using the SMRAI emulator model of REPPU global MHD simulation (Kataoka et al., 2024, Space Weather) with the data-assimilation (DA) of the SuperDARN dataset (Nakano et al., 2025, submitted to Space Weather). The new SMRAI-DA model results indicate an enhanced Joule heat in the sub-auroral region, ranging from 50 to 100 GW, during several non-extreme storms (-100 nT minimum Dst level) in 2023 and 2024. We discuss the relationship between the enhanced sub-auroral Joule heat and the red-aurora appearance from the middle-latitude Hokkaido region, Japan.