



## **Atmospheric Lunar Tidal Effects on the Ionosphere**

Yosuke Yamazaki (1), Tarique Siddiqui (2), Claudia Stolle (1,3), and Jürgen Matzka (1)

(1) GFZ German Research Centre for Geosciences, Potsdam, Germany, (2) High Altitude Observatory, National Center for Atmospheric Research, Boulder, CO, USA, (3) Institute of Earth and Environmental Science, University of Potsdam, Potsdam, Germany

The atmospheric lunar tide is a known source of ionospheric variability and its effect can be observed in various parameters, such as ionospheric currents and plasma density. Understanding characteristics of lunar tidal effects on the ionosphere provides insight into how the upper atmosphere responds to wave forcing from the lower atmosphere. We review the progress made in the last ten years concerning the lunar tidal variation in the ionosphere. Emphasis is placed on (1) the large lunar tidal variation in the ionosphere during sudden stratospheric warming events and (2) the seasonal and longitudinal dependence of the lunar tidal variation in the ionosphere. Contributions and findings based on global data from low-Earth orbiting satellite missions are also highlighted.