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Study of Medium-Scale Traveling Ionospheric Disturbances (MSTID) based on rocket/ground-based observation campaign

Mamoru Yamamoto^{1*}, Akinori Saito², Yuichi Otsuka³, Tatsuhiro Yokoyama⁴, Masa-yuki Yamamoto⁵, Takumi Abe⁶, Hiroto Habu⁶, Shigeto Watanabe⁷, R. F. Pfaff⁴, Miguel F. Larsen⁸

¹RISH, Kyoto University, ²Dept. of Geophysics, Kyoto University, ³STEL, Nagoya University, ⁴NASA Goddard Space Flight Center, ⁵Kochi University of Technology, ⁶JAXA/ISAS, ⁷Dept. of CosmoSciences, Hokkaido Univ., ⁸Clemson University

Medium-Scale Traveling Ionospheric Disturbances (MSTID) is enhanced in the summer nighttime of the mid-latitude ionosphere. The seeping mechanism of the MSTID is not only a simple reflection of atmospheric waves to the ionosphere, but includes complicated processes including the electromagnetic coupling of the F- and E-regions, and inter-hemisphere coupling of the ionosphere. A big observation campaign with sounding rocket(s) and ground-based instruments are planned for summer 2012. The key parameter of the observations is the neutral wind in the F- and E-regions. We present observation plan and current status of this research project.

Keywords: ionospheric waves, MSTID, MU radar, Sounding rocket, Neutral wind