Geophysical Research Abstracts Vol. 17, EGU2015-3563, 2015 EGU General Assembly 2015 © Author(s) 2015. CC Attribution 3.0 License.



Propagation of Spread F at low-latitude ionosphere from multi-point Doppler sounding

Jaroslav Chum (1), Miguel Cabrera (2,4), Jann-Yenq Liu (3), Jiri Base (1), Fernando Bonomi (2), Jiri Fiser (1), Frantisek Hruska (1), and Jan Lastovicka (1)

(1) Institute of Atmospheric Physics, Upper Atmosphere, Prague 4, Czech Republic (jachu@ufa.cas.cz), (2) Laboratorio de Telecomunicaciones, Facultad de Ciencias Exactas y Tecnología (FACET), Universidad Nacional de Tucumán (UNT), Argentina, (3) Institute of Space Science, National Central University, Chung-Li 320, Taiwan, (4) Centro de Investigación sobre Atmósfera Superior y Radiopropagación. Facultad Regional Tucumán. Universidad Tecnológica Nacional, Argentina

Propagation velocities and directions of spread F structures estimated from measurements by multipoint continuous Doppler sounding in Tucuman, Northern Argentina, and Taiwan are presented. It is shown that these structures propagate roughly eastward at velocities from \sim 70 to 180 m/s at both locations during nighttime hours. In Tucuman, most of the events were observed from September to March, i.e. during the local summer half of the year, whereas in Taiwan, the highest occurrence rate was recorded around equinoxes.

The propagation velocities and directions were estimated from the time delays between observations of the corresponding structures on different sounding paths (transmitter-receiver pairs). The velocities were also calculated from tilts in the Doppler shift spectrograms. The latter method made it possible to analyze more events.