



## **Study of the effect of SSW on foF2 during 2008-09, 2009-10 and 2012-13 events**

Manash Jyoti Mech<sup>(1)</sup>, B.R Kalita\*<sup>(1)</sup>

(1) Dibrugarh University, Dibrugarh., Assam, 786004, e-mail: manashmech3@gmail.com;  
bitapkalita@dibru.ac.in

The effect of SSW on foF2 during 2008-09, 2009-10, and 2012-13 in two longitudinal sectors (18°E and 285°E) is being investigated using ionosonde data. The stations taken are MILLSTONE HILL (42.6°N, 288.5°E), JICAMARCA (-12.0°N, 283.2°E), SANVITO (40.6°N, 17.8°E) and HERMANUS (-34.42°N, 19.22°E). The difference from the preceding quiet day average is reported. Major warmings (MW's) of SSW 2008-09, 2012-13 were in January and 2009-10 was in February. The strongest major warming among these was observed in 2008-09. The SSW 2008-09 started around Dec 2008, peaked on Jan 24th, and continued until late Jan 2009. As compared to the decaying phase of this SSW event, maximum changes in foF2 were observed in its developing phase. On the day of January 7th, 2009, during the afternoon period in SANVITO in the northern hemisphere, around the 18°E sector, the changes observed in foF2 were maximum, i.e., 47.10%. The SSW of 2009-10 started in early January and peaked on February 9, 2010. On the day of MWs, maximum changes of foF2 were observed on MILLSTONE HILL in the northern hemisphere as compared to HERMANUS in the southern hemisphere. In that SSW event, in its preceding phase, we noticed the maximum foF2 change for both the stations. Significant enhancement of foF2 was observed on February 2nd, 2010 in the post-sunset period of MILLSTONE HILL (285°E), whereas in Hermanus(18°E), foF2 development was observed in the afternoon period of January 30th, 2010. The 2012-13 SSW events started in late December 2012, peaked on January 6th, and continued until late January 2013. On the onset of MW of that event, the changes observed were maximum (32.85%) in JICAMARCA (285°E) in the southern hemisphere, where depletion of foF2 occurred in the afternoon period on that day. However, on the day of MW's, the change of foF2 observed at JICAMARCA was insignificant.