

## Space Weather Aspects: Large-scale Structure and Evolution of Solar Wind Transients

P.K. MANOHARAN, K. MAHALAKSHMI, K. PRABHU, G. AGALYA, and  
SHAHEDA BEGUM

*Radio Astronomy Centre, National Centre for Radio Astrophysics,  
Tata Institute of Fundamental Research, Udhamandalam (Ooty), India.*

In this talk, we present the space weather aspects of three-dimensional evolution of the solar wind transients associated with coronal mass ejections (CMEs) and co-rotating interaction regions (CIRs) in the Sun–Earth distance and beyond. The large-scale changes of the solar wind have been primarily obtained from the interplanetary scintillation (IPS) measurements made with the Ooty Radio Telescope, which can probe a large number of scintillating radio sources per day and allows to image the spatial and temporal changes of ambient and transient solar wind structures in a 3-AU diameter heliosphere. The near-Earth effects of CMEs and the development of CIRs in the interplanetary space are discussed for specific periods and solar rotations. The main point in this study is that for a transient, the magnetic energy associated with it determines the radial evolution as well as its consequences in the heliosphere.