



SVIRCO diurnal wave during high-speed solar-wind streams*

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Among the different kind of solar wind macro-perturbations travelling in the interplanetary space, two types of high-speed solar-wind streams had been identified in the past. They are the co-rotating streams coming from coronal holes and the transient ones originated from energetic solar activity phenomena. We have studied the characteristic behaviour of the diurnal wave registered by neutron monitors with equatorial view direction to facilitate the stream type identification when in situ data of the interplanetary parameters are missing. We report results from two case studies: (i) the January 27 – February 5, 2000, when a high-speed solar-wind stream coming from a coronal hole engulfed the Earth; (ii) the May 1 – May 24, 2005, mainly characterized by transient perturbations. The 5-min data of the neutron monitor of the SVIRCO Observatory (Rome – Italy) were analysed together with the solar-wind speed and the interplanetary magnetic field parameters recorded in the near-Earth environment by using the Wavelet Technique. The variability of the 24-h periodicity is discussed and the main differences in the observational features are described.

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