

Relation between loop-shaped interplanetary disturbances and magnetic flux ropes

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Loop-shaped interplanetary (IP) disturbances were identified for some coronal mass ejection (CME) events from interplanetary scintillation (IPS) measurements made with the 327-MHz for-station system of the Solar-Terrestrial Environment Laboratory (STEL) of the Nagoya University. Although the mechanism to produce such features remains an open question, there are two possible interpretations; i.e. observed features may represent either the compressed solar wind plasma associated with IP shocks or the coronal ejecta confined within the magnetic flux rope. To elucidate the origin of loop-shaped IP disturbances, we investigated relation between the loop structure and the magnetic flux rope for three CME events which occurred in 2001. In this study, we analyzed STEL IPS observations to retrieve the 3-dimensional distribution of IP disturbances, and compared them with flux rope geometries deduced from cosmic ray modulation and in situ observations. The result of this comparison will be presented.