Relationship between occurrences of magnetic impulse events and solar wind discontinuities

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Eleven magnetic impulse events (MIEs) with large amplitudes (> 100nT) were investigated using ground and space based data sets. The following results were obtained. 1) Traveling convection vortices (TCVs) accompanied by MIEs shows good conjugacy in both northern and southern hemispheres, although the guiding centers of TCVs are away from the calculated conjugate points in the noon sector. 2) MIEs in the dawn sector is related to the solar wind discontinuity becomes perpendicular to the bow shock in the dawn side, while MIEs in the noon sector is related to the discontinuity that is parallel to the sun-earth line. The interaction between the solar wind and the bow shock is suggested to play an important role for the generation of MIEs.