

The relation between the types of the magnetic storm and the combinational structures of the interplanetary

Yufen Gao[1], # Desheng Han[2]

[1] IGCSB, [2] Earth and Planetary Sci., Kyoto Univ

By analyzing some typical events of the interplanetary condition for generating variant types of magnetic storms, discovers some relation between the types of the magnetic storm and the interplanetary structures. The result shows that the variance of the type of magnetic storm is due to the different combinations between the disturbed structure of interplanetary and the background solar wind conditions; The initial-phase of intense storms is caused by the high-density structure in front of the IMF structure; The development of the intense main-phase is owing to the strong IMF structure which has a large scale and large variation range B_s component; With the magnitude and scale of both the IMF and B_s component declining, as well as with the velocity of the magnetic field and its background solar wind slowing down, the magnitude of the disturbed geomagnetic which caused by them is reduction. The combinations of different magnitude, different scale and different velocity of the magnetic structure result in the variant type of the storms.