

**[KSS-19] Interaction of the Earth's Magnetosphere and a Solar-originated Flux Rope Whose Frontal Magnetic Field is Northward**

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The geomagnetic storm is caused by the interaction of the Earth's magnetosphere and a solar wind disturbance. There are many different types of disturbances causing storms, but biggest storms are mostly driven by solar-originated magnetic flux ropes. It is generally believed that the storms are conditioned by southward IMFs, because the southward IMF can generate the reconnection with the northward geomagnetic field. However, it is sometimes observed that a storm occurs when the IMF is northward. In this paper, we investigate the interaction of the Earth's magnetosphere and a solar-originated flux rope whose frontal magnetic field is northward, using three-dimensional global magnetohydrodynamic (MHD) simulations. If the magnetosphere can intrude into the frontal magnetic field of the flux rope, a reconnection of the magnetosphere and the rear magnetic field of the flux rope is expected. We report the preliminary result of this study.

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