Solar Origin and Geomagnetic Effect of High-Density Region in the Magnetic Cloud

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Abstract
The effect of high-density region of the magnetic cloud on geomagnetic disturbances (Dst) and its solar origin are studied. Results suggest that the high-density region in the magnetic cloud observed on May 2, 1998 affects Dst variation and the magnetic structure of the magnetic cloud is consistent with that observed near the filament disappearance region and the Heliospheric current sheet (HCS).

Keywords: Magnetic cloud, geomagnetic disturbances (Dst), Filament disappearance

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Influence of Strong Wind on the Fall Accident at the Bulk Cargo Door Position of an MD-11 Airplane

by
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Abstract
At the Fukuoka airport under strong wind, a veteran worker, who was checking the rock pin of the bulk cargo door of an MD-11 airplane, fell down. In order to investigate the relationship of this fall accident and strong wind, a wind tunnel experiment and numerical computations using Fluent were carried out. Using a 1/100 scale model of the airplane, velocity distribution was measured by a hot wire probe. Calculating the three-dimensional inviscid incompressible flow, a flow field was obtained. It was shown that when there is a side wind against the airplane axis, a strong blow with complex vortices occurs on the leeward rear side of the fuselage. It is considered that such a strong wind broke down the worker's balance and led to the fall accident.

Keywords: Strong Wind, Fall Accident, Airplane, Wind Tunnel Experiment, Numerical Calculation

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