

## **Magnetic Field and Plasma Variations Associated with SC in the Magnetosphere**

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In the present paper, we analyzed data from CPMN (a network of magnetometers managed by Kyushu University) and data from Geotail (a Japan-US scientific satellite) to understand relationships between magnetic field and plasma variations associated with sudden commencements (SC) in the magnetosphere. It is found that: (1) During the 'rise time' of SC, fast MHD mode were predominantly observed [14/21 Event]. (2) During the 'rise time' period, short-period variations with a period of 30sec-1min showed diamagnetic behavior [21/21 Event]. (3) After the 'rise time', the magnetic field and plasma variations showed diamagnetic behavior prominently [16/21 Event]. It is concluded that during the 'rise time' of SC, fast-mode variations are excited within the entire magnetosphere, while simultaneously small-scale variations with a period of 30sec-1min are excited within smaller areas of fast mode variations regions.