[SO03] Globally non-simultaneous cosmic ray intensity decrease events and their implication

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The ~10 GeV cosmic ray intensity is observed by the neutron monitor(NM) stations scattered over the globe of the earth. It is generally supposed that the CR intensity decrease (Forbush Decrease) events are observed simultaneously by NMs. However, we archived for the first time non-simultaneous FD events from 1998 to 2002. We investigated the properties of non-simultaneous FD events and the solar wind conditions causing such events in order to determine what solar wind conditions lead to global simultaneity of FD events. We found that global simultaneity of FD events depends on speed and interplanetary magnetic field strength of solar wind overtaking earth magnetosphere and its propagation direction. This model of FD simultaneity can be tested by the STEREO mission.

[SO04] Relationship between magnetotail flow bursts and ground ULF waves

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There are several examples to support that low-latitude Pi2 pulsations (period = 40-150 s) are directly driven by earthward flow bursts in the magnetotail, but no statistical study for flow burst-driven Pi2 pulsations has been reported until now. In this study we statistically examine the relationship between earthward flow bursts and low-latitude Pi2 pulsations using the magnetic field and plasma moment data on the Geotail spacecraft and the magnetic field data at the low-latitude Kakioka station (L = 1.3) from January 1995 to July 2001. During this time interval we identified 849 flow burst events when Geotail was in the region bounded by $-31 < X_{GSM} < -5$ R_E and $|Y_{GSM}| < 10$ R_E and 556 Pi2 events when Kakioka was on the nightside (2100-0300 hours of local time). We found that only 53 Pi2 events occurred within 10 minutes before or after the onset times of the flow burst events. That is, about 6% of the flow burst events were associated with low-latitude Pi2 pulsations. This indicates that flow bursts in the magnetotail do not play a significant role in exciting low-latitude Pi2 pulsations.