

# **Solar wind RAM pressure and the geomagnetic activity**

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The solar flares, coronal holes and the coronal mass ejections are the main source of geomagnetic activity. The main role is attributed mainly to coronal mass ejections – CMEs. There is no simple association between CMEs and flares: there are large CMEs without flares and big flares without CMEs. Flares and CMEs seem to be part of a single phenomenon, a solar eruption, and neither one is the cause of the other. There have been a number of detailed analyses of geomagnetic contributions due to different solar wind sources, and also on the classification of geomagnetic activity according to each solar wind structure. Observations from Skylab, Helios, Ulysses, ACE and SOHO have been very useful for the understanding of the Sun - Earth system. A set of recent solar events were selected and using the ACE data and geomagnetic observation in the form of Ap, Kp and Dst we performed a detailed study of the control of IMF and solar wind parameters on the enhancements of geomagnetic activity. It is found that there are three types of events for the enhancement in geomagnetic activity associated with (1) negative or southward Bz, (2) oscillatory variation in Bz and (3) positive or northward Bz. Here these observations and their implications will be discussed. The solar wind RAM pressure on logarithmic scale show almost linear relationship with Kp and not so with other geomagnetic indices. The slope of the line is found to be different from event to event. Kp enhancement varies from  $\sim 2$  to 6 for a tenfold increase in the solar wind RAM pressure during different solar events.