## Geomagnetic Storm and Their Association with Solar Interplanetary Parameters

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A geomagnetic storm is a global disturbance in Earth's magnetic field usually characterized by a main phase during which the horizontal component of the Earth's low latitude magnetic field are significantly depressed over a time span of one to a few hours followed by a recovery phase that may extend over several days (Rostoker 1997). These magnetic storms generally occur due to abnormal conditions in the interplanetary magnetic field (IMF) and solar wind plasma emissions caused by various solar phenomenons. These multifaceted phenomenon originates at sun's atmosphere and occur in interplanetary medium filled with solar wind i.e. magnetosphere. The study of these world wide disturbance of Earth's magnetic field are importance in understanding the dynamics of solar-terrestrial environment and further more because such storm can cause life threatening power outrages, satellite damage, communication failure and navigational problems. It is well studied that a southward turning of the interplanetary magnetic field (IMF) plays an important role in triggering the main phase of geomagnetic storms. However it is not only a key factor in initiation process of main phase of storm but more over it determines the strength of a storm also.

The present work deals with a complimentary question mainly referring to solar and interplanetary features that causes very large and intense geomagnetic storms, for this purpose we have used the Dst index as an indicator of geomagnetic activities, using which we have classified the storm event in to two categories i.e.

Intense geomagnetic storms with  $Dst \leq -300$  nT, and

Supper intense storms with Dst index  $\geq$  -301 nT.

In the present study geomagnetic storm events are characterized by the Disturbance storm time (Dst) index measured in terms of nano Tesla (nT) during the periods 1996-2003. A storm is said to be weak if (Dst  $\leq$  50 nT), Moderate if (Dst51-150nT), Intense/great if (Dst151nT 250nT), Super storm if (Dst  $\geq$  251 nT).