

Abstract: Geomagnetic storm is a complex process: it shows various features at different heights , different latitudes and longitudes. In the Magnetosphere region basically the different types of shocks are observed. This region is the first region where solar winds and Coronal mass ejections start to interact with the earth's magnetic field. The direction of the interplanetary magnetic field (IMF) plays significant role in severity of the geomagnetic storm. An ionospheric response to storm-induced changes in the neutral atmosphere affects the F2 layer due to a strong Joule heating in the auroral thermosphere. At lower heights the role of ionization and photochemical processes increases due to shorter electron lifetimes. At the base of the F1 layer (160–170 km) the storm effect is almost absent. Farther down, in the lower ionosphere, a strong increase of the electron density is observed as a consequence of a very strong enhancement of particle precipitation. In the neutral upper middle atmosphere, the effects of enhanced precipitation weaken with decreasing altitude and become insignificant in the stratosphere. The effect of geomagnetic storms reappear in the lower atmosphere but as an effect of different morphology and origin. In general the effect of the storm at the boundary of the magneto-pause is transmitted to all regions of magnetosphere and ionosphere all the way towards the earth's surface.