

Statistical study of CME properties during the Gnevyshev Gap in cycle 23 and 24

Burud D. S., R. S. Vhatkar,

Department of Physics, kadi sarvo Vishwavidyalaya

E-mail:,dipali_msc@ldrp.ac.in

Abstract-

Solar cycle 24 shows dual peak structure at 2012 and 2014 while for the solar cycle 23 at 2000 and 2001. The dual peaks are separated by 1.2 and 2.3 years for the successive cycle. Sunspot numbers decrement is observed as compare to the pervious cycle. In this work, it was examined whether these peaks in sunspots are reflected in other parameters such solar wind speed (V), solar wind temperature (T), alpha to proton density ratio (α/P) and proton density (N) and Interplanetary Magnetic field (IMF) B. Proton density (N) and the temperature (T) do not have any relation with the sunspot numbers around the peak. A broad peak is observed for the velocity before the first peak. The high correlation is obtained for the velocity with temperature and density while the average IMF (B) has medium correlation. It is quite different from the observations of Kane (2005), the interplanetary parameters N, V (correlation with $R < 0.30$), B (with correlation of 0.5) showed short-time peak structures and 0.3 but mostly not matching with the GP. By comparing the average values solar parameters and activity around the GP we concluded that, the solar cycle 24 is weak as compare with pervious cycle but the CME and Halo CME activity in current cycle is higher.