

Correlative study of the diurnal variations of cosmic rays to the interplanetary parameters during quiet days

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We studied the cosmic ray data as well as interplanetary magnetic field data (B_z) and solar wind velocity data to examine the relation and correlation between quiet day diurnal variations during the time interval 1964-1995. The amplitude of cosmic ray diurnal anisotropy significantly correlates with the polarity of z component of IMF, B_z during quiet days. The amplitude and time of maximum of the quiet day diurnal variation of galactic cosmic rays is linearly correlated with: the z- component of interplanetary magnetic field (IMF) vector, B_z . The solar wind velocity found to remain low for negative B_z ; whereas it remains high for positive B_z during quiet days. Our observations suggest that the direction of the anisotropy of quiet days contribute significantly to the long-term behaviour of the CR diurnal anisotropy.