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Comparative study of first three harmonics of cosmic ray intensity during recent solar cycle

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Abstract. is well known that the cosmic ray intensity get modulated near the Earth's atmosphere due to the spinning of the Earth and perturbation in interplanetary medium. In the present study we have derived the anisotropic components of the cosmic ray intensity using the hourly values of the different neutron monitors. We have applied the harmonic analysis technique to deduce amplitudes and phases on day to day basis as well as on monthly average basis.This analysis has been done for the period of 1986-2000, which covers the whole period of solar cycle 22 and most of the period of solar cycle 23. A detailed characteristic of the diurnal, semidiurnal and tridiurnal have been studied . Second and third harmonics show better correlation between them. However, we did not observe any significant correlation between first and second harmonics. Further , we have analysed to observe the influence of two types of high solar wind streams on cosmic ray anisotropic variation. Flare generated streams are found one of the responsible factor to produce isotropic and anisotropic changes in cosmic rays.