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Cosmic ray diurnal variation

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Data from two neutron monitor stations and one muon telescope with median primary rigidity (R_m) ranging from 18 GeV to 60 GeV are used to study of the cosmic ray diurnal variation over the time period: 1953-2006. The amplitude of the diurnal variation shows an 11-year cycle, while the local time of maximum exhibits a 22-year cycle. The enhancements of the diurnal variation amplitude during the descending phase of solar activity show 11-year period as well. The time of these enhancements is coincident with the time of large interplanetary magnetic field (IMF) magnitude, large solar wind speed, temperature and large upper cut-off rigidity.