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27-day variation of cosmic rays observed with the Global Muon Detector Network

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We derive the daily GG index of approximately 60 GV galactic cosmic rays (GCRs) from the data observed with the Global Muon Detector Network (GMDN). GG index is the difference between intensities recorded in the geographically north- and south-viewing directional channels and designed to be the measure the north-south anisotropy free from the atmospheric temperature effect in the muon count rate. We recognize that daily GG index, calculated by GMDN data, is highly anticorrelated with By component of the interplanetary magnetic field (IMF) and shows a clear recurrent character (~27 days) related to the Sun's rotation. We use Fourier transform and wavelet analysis to study quasiperiodic character of data. Detailed analysis are presented for the solar minimum 2007-2008 of solar cycle no.23 and near the solar maximum 2013-2014 of solar cycle no 24.

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