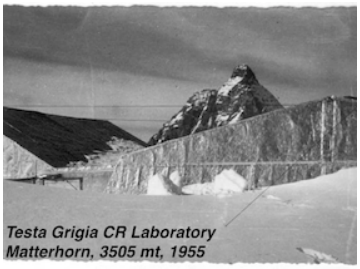

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Analysis of the diurnal anisotropy of cosmic rays in #23 and #24 solar cycles

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We analyze behavior of the diurnal anisotropy of Galactic Cosmic Rays (GCR) in two subsequent # 23 and #24 cycles of solar activity based on the hourly neutron monitor data. We study drift effects in diurnal GCR anisotropy caused by the gradient and curvature of the regular Heliospheric Magnetic Field (HMF), and due to the heliospheric neutral sheet. In order to thoroughly separate sectors of the HMF and its influence on the anisotropy of GCR for positive (A>0) and negative (A<0) polarities of solar magnetic cycle, two minima of solar activity (1997 (A>0) and 2009 (A<0)) have been considered. We use the harmonic analyses method to calculate radial Ar and tangential Af components of the ecliptic diurnal anisotropy of GCR based on data of neutron monitor for cut of rigidities less than 5GV. It is shown that there are differences between the diurnal anisotropy of GCR found in the reliably established various sectors (duration of each sector is ≥4 days) of HMF. These results were compared with the 3D anisotropy of GCR, obtained by the Global Spectrographic Method (GSM), based on hourly data of all operating neutron monitors. An interpretation of obtained results are provided based on the present modern theory of GCR propagation.

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