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Selection of the solar-diurnal anisotropy of cosmic rays by local and global methods

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According to the Moscow neutron monitor (NM MOSC) data, using harmonic analysis, the characteristics of the solar-diurnal anisotropy of cosmic rays (CR) on quiet days were obtained for a long period from 1965 to 2020. It has been established that the average daily CR variations at NM MOSC are almost completely described by two harmonics of the solar-diurnal anisotropy and does not contain signs of other influences. Comparison with the average daily characteristics of the equatorial component of the CR vector anisotropy, obtained from the data of the global NM network using the global survey method, showed good agreement between the results of the two methods. From a comparison of local and global results, estimates of the coupling coefficients of the first harmonic of CR anisotropy for NM MOSC was done and a new experimental method for calculating the coupling coefficients of individual detectors is proposed.

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