Coupling functions for NM-64 and NM without lead derived on the basis of calculated apparent cutoff rigidities for CR latitude survey from Antarctica to Italy in minimum of solar activity

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In Dorman et al. (2007) it was calculate the apparent cut-off rigidities for the backward route (Antarctica-Italy) of the CR latitude survey performed on a ship during 1996-1997 solar minimum. These computations were done on the basis of results of trajectory calculations for inclined cut-off rigidities for various azimuth and zenith angles (0°, 15°, 30°, 45°, 60°) and azimuth directions changing from 0° to 360° in steps of 45°. The information on integral multiplicities of secondary neutrons detected by neutron monitor in dependence of zenith angle of incoming primary CR particles have been also used. This information is based on the theoretical calculations of meson-nuclear cascades of primary protons with different rigidities arriving to the Earth's atmosphere at zenith angles 0°, 15°, 30°, 45°, 60° and 75°. By using this information and data of CR latitude survey from Antarctica to Italy in minimum of solar activity we determine coupling functions for NM-64 and NM without lead.


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