



Contribution ID: 117

Type: **Oral contribution**

North-south anisotropy of galactic cosmic rays observed with the Global Muon Detector Network (GMDN)

Tuesday 4 August 2015 15:15 (15 minutes)

We analyze the north-south anisotropy (NSA) of galactic cosmic rays (GCRs) observed with the GMDN on hourly basis in the “toward”(T) and “away”(A) IMF sectors separately. From the monthly mean and its standard error of NSA in each of T and A sectors, we deduce the “T/A separation” and its temporal variation during a period between 2006 and 2014. We also examine the “success rate” which is a ratio of the number of hours when the sign of the observed NSA is positive (negative) in T (A) IMF sector to the total number of hours and is introduced as a parameter indicating to what extent we can infer the IMF sector polarity from the sign of the observed NSA. The temporal variations of “T/A separation” and “success rate” will be discussed in relation to the solar modulation of GCRs in the Solar Cycle 24.

Collaboration

– not specified –

Registration number following ”ICRC2015-I”

126

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Session Classification: Parallel SH 07 Modulation I

Track Classification: SH-EX