



Contribution ID: 455

Type: **Poster contribution**

Neutron Monitors and cosmic-ray data for solar modulation studies: 2. Modulation time series.

Saturday 1 August 2015 15:30 (1 hour)

Galactic cosmic-ray fluxes (GCR) and neutron monitor (NM) count rates depend on Solar activity. The modulation levels estimated in previous studies strongly depend on the datasets used (from different NM stations or GCR data) and on the different assumptions made (unknown interstellar flux, NM yield functions, ...). We discuss an improved method to estimate the modulation parameter ϕ for any GCR data and NM times series. To do so, we used recent satellite and balloon GCR data to constrain the interstellar fluxes and to calibrate NM stations. These fluxes are then folded with the NM yield functions and compared to their count rates to extract ϕ times-series. Reference values are calculated from a set of neutron monitor stations from 1960 to 2015 and cross-checked with those obtained from GCR data. We also provide (i) a web interface to evaluate ϕ at any period from NM data, and (ii) homogeneous sets of modulation levels for all GCR data in CRDB.

Keywords: Solar modulation, Cosmic rays, Neutron monitor

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

417

Author: GHELFI, Alexandre (Centre National de la Recherche Scientifique (FR))

Co-authors: MAURIN, David Alain (Centre National de la Recherche Scientifique (FR)); DEROME, Laurent Yves Marie (Centre National de la Recherche Scientifique (FR))

Presenters: GHELFI, Alexandre (Centre National de la Recherche Scientifique (FR)); MAURIN, David Alain (Centre National de la Recherche Scientifique (FR)); DEROME, Laurent Yves Marie (Centre National de la Recherche Scientifique (FR))

Session Classification: Poster 2 CR

Track Classification: CR-EX