



Contribution ID: 261

Type: Oral Presentation

On some nuances of time-dependent galactic cosmic ray proton modulation

Thursday, 6 July 2023 14:00 (20 minutes)

The study of galactic cosmic ray (GCR) antiparticles can potentially lead to new insights into fundamental physics, in particular in the search for indirect evidence of dark matter annihilation. Identifying the signature(s) of such processes, however, is complicated by the heliospheric modulation of these particles. Modulation becomes less significant at higher energies, and therefore it would be of interest to ascertain at which energy such effects become negligible. Although previous studies have reported on this, to date no attention has been given to the influence of solar cycle-dependent effects. The present study aims to do so, using our 3D, fully time-dependent ab initio GCR modulation model, that can reasonably fit both proton and antiproton observations over multiple solar cycle. Furthermore, the influence of time-dependent GCR modulation on potential signals of dark matter annihilation will be investigated.

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

Primary author: MOLOTO, KATLEGO (NORTH WEST UNIVERSITY)

Presenter: MOLOTO, KATLEGO (NORTH WEST UNIVERSITY)

Session Classification: Astrophysics & Space Science

Track Classification: Track D2 - Space Science