Contribution ID: 28

## Numerical modeling of cosmic ray proton and helium observed by AMS-02 during the solar maximum of Solar Cycle 24

Wednesday 25 April 2018 11:05 (20 minutes)

Galactic cosmic rays (GCRs) are affected by solar modulation while they propagate throughout the heliosphere. The study of the time variation of the GCR spectrum observed at Earth can shed light on the underlying physical processes, specifically diffusion and particle drifts. The AMS-02 experiment on board the International Space Station measured with very high accuracy the time variation of the cosmic ray proton and helium flux between May 2011 and May 2017 in the rigidity range from 1 to 60 GV. In this work, a comprehensive 3D steady-state numerical model is used to solve the Parker's transport equation and to reproduce the monthly fluxes observed by AMS-02. Preliminary results on the time dependence of the diffusion coefficient for proton and helium will be presented.

Author: Dr CORTI, Claudio (University of Hawai'i at Manoa (US))

**Co-authors:** Prof. POTGIETER, Marius (North-West Unviersity); BINDI, Veronica (University of Hawai'i at Manoa (US)); CONSOLANDI, Cristina (University of Hawai'i at Manoa (US)); LIGHT, Christopher (University of Hawaii at Manoa); PALERMO, Matteo (University of Hawai'i at Manoa (US)); POPKOW, Alexis (University of Hawaii at Manoa); WANG, Siqi (University of Hawai'i at Manoa (US))

Presenter: Dr CORTI, Claudio (University of Hawai'i at Manoa (US))

Session Classification: Late Wednesday Morning