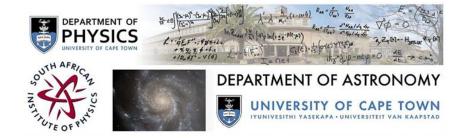
## **SAIP2016**



Contribution ID: 75 Type: Oral Presentation

## The total solar modulation of low energy electrons in the heliosphere

Wednesday, 6 July 2016 14:20 (20 minutes)

Abstract content <br/> &nbsp; (Max 300 words)<br/> dry-<a href="http://events.saip.org.za/getFile.py/starget="\_blank">Formatting &<br/> &classed chars</a>

Modeling and the subsequent understanding of the processes responsible for the solar modulation of Jovian and galactic electrons require that a source function for Jovian electrons and a heliopause spectrum (HPS) for galactic electron as an input spectrum be specified at the heliopause (assumed to be the solar modulation boundary). Using a comprehensive three-dimensional numerical model based on solving Parker's transport equation, both a new Jovian source function and HPS are used to compute the total modulation of electrons over an energy range from 1 MeV to 50 GeV. The modulation of low energy electrons is a particular handy tool to construct a suitable diffusion tensor to assure compatibility between model computations and observations from different spacecraft and balloon flights relevant to electrons in the heliosphere. The choice of a Jovian electron source function, a HPS and the choice of diffusion coefficients (DCs) influence the total modulation that occurs between the Earth and the heliospheric boundary. Observationally, the galactic electron intensity below "50 MeV is not known at Earth because of the dominance of the Jovian electrons at these energies in the inner heliosphere. With the HPS established, a prediction is made of what the galactic electron intensity at these low energies could be at the Earth, as a part of a long missing piece of the modulation puzzle.

Key words: Cosmic rays; Heliosphere; Solar modulation; Jovian electrons; Galactic electrons

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**Session Classification:** Space Science

**Track Classification:** Track D2 - Space Science