

ANALYSIS OF THE SOLAR CYCLE MODULATION IN THE COSMIC RAY INTENSITY OBSERVED AT SOUTH AMERICA IN THE LAST DECADE

**Rafael R. S. de Mendonça^{1,2}; Jean-Pierre Raulin¹; Carlos R. Braga²; Alisson Dal Lago²;
Ezequiel Echer²; Francisco de O. Durães¹; Kazuoki Munakata³**

1 - Center for Radio Astronomy and Astrophysics at Mackenzie, Brazil.

2 - National Institute for Space Research, Brazil.

3 – Shinshu University, Japan.

Cosmic rays are energetic particles (mostly protons with energy from MeV to ZeV) which present a practically isotropic flow in the space region close to the Earth. Solar and interplanetary phenomena affect the cosmic ray intensity observed at ground producing different transient and periodic variations. In this work, we analyze the 11 and 22-year cosmic ray intensity variation observed by three cosmic ray detectors. We compare the sunspot number and mean solar magnetic field obtained by the WSO (Wilcox Solar Observatory) with the cosmic ray intensity observed by the São Martinho da Serra (Brazil) and CARPET (Argentina) detectors between 2006 and 2017. In addition, we compare the results with that obtained from a similar analysis using the cosmic ray intensity observed by the Nagoya (Japan) detector during the last 4 decades, from 1971 until 2017.