

Presenter: Rampelotto Pabulo Henrique

## **The influence of UV-B and temperature on the spore biological dosimetry at south of Brazil (29°S, 53°W)**

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An overview involving UV-B, spore dosimetry and temperature monitoring at the INPE's Southern Space Observatory – SSO, (29°S, 53°W), South of Brazil, from 2000 to 2006 is reported. The biosensor, based in the inactivation of spores of *Bacillus subtilis* TKJ 6312 (Spore Inactivation Doses, SID), has been used as indicator of the biologically effective solar radiation. At monthly exposures, the SID (Spore Inactivation Dose) is determined as the natural logarithm of surviving fraction;  $SID = -\ln(N_e/N_c)$ , where  $N_e$  and  $N_c$  represent the average number of colony-formers recovered from exposed and control spots, respectively. Monthly exposures were performed to monitor the long term changes in solar UV radiation. For this propose, the biosensor needs to be stable under various and adverses climatological conditions. In these contexts, the impacts of the solar radiation and temperature on biological systems have been studied. The temperature, UV-B and SID varied relatively to about 40%, 80% and 92% respectively for the analyzed period. The principal perturbations of the temperature on the spore inactivation doses are observed for each year in the end of the springs and during their summers indicating an 11% influence relatively to the absolute values.

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