Geophysical Research Abstracts
Vol. 15, EGU2013-11720, 2013
EGU General Assembly 2013

What can we learn about the Sun with PREMOS/PICARD?

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Total and Spectral Solar Irradiance are key input parameters to atmospheric/oceanic and space weather models. We present here spectral solar irradiance data from the radiometer PREMOS onboard the PICARD satellite. This instrument convers the solar spectrum from the Ultraviolet to near-infrared, and provides valuable information and nourishes theoretical models. Based on redundancy strategies, instrumental degradation has been mostly corrected, revealing surprising behavior from the visible and near-infrared filters.
We compare these data with those from the VIRGO/SOHO and SOLSTIC/SORCE experiments. Finally we use COSI to model the variability of the irradiance, assuming that the latter is determined by the evolution of the solar surface magnetic field as seen with SDO/HMI data. A direct comparison shows a very good correlation for most of channels from PREMOS.