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Solar spectral irradiance variability: what do we (not) know ?

Matthieu Kretzschmar

LPC2E, University of Orleans & CNRS, Orléans cedex 2, France (matthieu.kretzschmar@cnrs-orleans.fr)

Solar spectral irradiance is an important driver for the Earth's atmosphere. The irradiance spectrum received by the Earth varies at all time scale and the amplitude of the (relative or absolute) depends strongly on the considered wavelengths. We will make a review of our current knowledge of solar irradiance variability based on observations, models and solar proxy, trying to identify points where no general agreement exists in the community. In more details, we will focus on the cycle and longer-term variations of the spectrum, based on the past and present observations and their agreement with models. We will also discuss the assumption behind the models and how proxy are used to estimate solar irradiance variations in the past.

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