

Assessment of Solar Irradiance Datasets for the SOLID Project

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SOLID is a project funded by the European Commission that aims at building a solar spectral irradiance datasets composite with time dependent errors over the space era. The work package 2 of this project is dedicated to the homogenization and assessment of existing irradiance datasets. In this context, we will present several tools and physical analysis applied on irradiance time series in order to deal with data gaps, outliers and to assess the uncertainty in the variations of solar irradiance. In a first step and in a common manner for all datasets, we identified data gaps and outliers and remove them using an interpolation routine. We then estimated the short term noise level on each time series. The next step consists in intercomparing several datasets between them and with proxy models to identified suspect (i.e., instrumental) trends. We will present the detected suspect behaviors of irradiance data sets, asking for feedback, and discuss how we can estimate the uncertainty on the long term variations from these analyses.

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