



A Collaborative FP7 Effort towards the First European Comprehensive SOLAR Irradiance Data Exploitation (SOLID)

Margit Haberreiter (1), Maria Dasi (2), Veronique Delouille (3), Giulio Del Zanna (4), Thierry Dudok de Wit (5), Ilaria Ermolli (6), Matthieu Kretschmar (5), Natalie Krivova (2), Helen Mason (4), Rami Qahwaji (7), Werner Schmutz (1), Sami Solanki (2), Gerard Thuillier (8), Kleareti Tourpali (9), Yvonne Unruh (10), Cis Verbeeck (3), Mark Weber (11), and Tom Woods (12)

(1) PMOD/WRC, Davos Dorf, Switzerland (margit.haberreiter@pmodwrc.ch), (2) MPS, Lindau-Katlenburg, Germany, (3) ROB, Brussels, Belgium, (4) University of Cambridge, UK, (5) University of Orleans, France, (6) INAF, Italy, (7) University of Bradford, UK, (8) LATMOS/CNRS, France, (9) AUTH, Thessaloniki, Greece, (10) Imperial College, UK, (11) Universität Bremen, Germany, (12) LASP, University of Colorado, USA

Variations of solar irradiance are the most important natural factor in the terrestrial climate and as such, the time dependent spectral solar irradiance is a crucial input to any climate modelling. There have been previous efforts to compile solar irradiance but it is still uncertain by how much the spectral and total solar irradiance changed on yearly, decadal and longer time scales. Observations of irradiance data exist in numerous disperse data sets. Therefore, it is important to bring together the European expertise in the field to analyse and merge the complete set of European irradiance data, complemented by archive data that include data from non-European missions. We report on the initiation of a collaborative effort to unify representatives from all European solar space experiments and European teams specialized in multi-wavelength solar image processing. It is intended to include the European groups involved in irradiance modelling and reconstruction. They will work with two different state of the art approaches to produce reconstructed spectral and total solar irradiance data as a function of time. These results will be used to bridge gaps in time and wavelength coverage of the observational data. This will allow the proposing SOLID team to reduce the uncertainties in the irradiance time series - an important requirement by the climate community - and to provide uniform data sets of modelled and observed solar irradiance data from the beginning of the space era to the present including proper error and uncertainty estimates. Climate research needs these data sets and therefore, the primary benefit is for the climate community, but the stellar community, planetary, lunar, and ionospheric researchers are also interested in having at their disposition incident radiation of the Sun. The proposing team plans to realize a wide international synergy in solar physics from 7 European countries, and collaborators from the US, complemented by representatives from the climate community, who will accompany their research work with wide dissemination activities.