



Comparison of surface solar irradiance measurements over Ireland: Satellite data, in-situ observations and high resolution regional re-analysis model data.

Willemien van Hoeve Phelan (1), Emily Gleeson (2), and Michael Gill (3)

(1) Climatology & Observations Division, Met Éireann, Glasnevin Hill, Dublin, Ireland, (2) Research, Environment & Applications Division, Met Éireann, Glasnevin Hill, Dublin, Ireland, (3) Research, Environment & Applications Division, Met Éireann, Valentia Observatory, Cahirciveen, Co Kerry, Ireland

The gridded satellite dataset of Surface Solar Radiation – Heliosat (SARAH) made available by the EUMETSAT Climate Monitoring Satellite Application Facility (CM SAF) is analysed. From the SARAH dataset we look at daily data of Surface Incoming Shortwave radiation (SIS) for the period 1983 – 2013 for a domain covering Ireland on a $0.05^\circ \times 0.05^\circ$ regular grid.

The satellite data is compared to in-situ measurements of solar radiation (global irradiance) from seven meteorological stations. The satellite data is also compared to the climate re-analysis dataset from the Met Éireann very high resolution regional climate re-analysis for Ireland (MÉRA). This re-analysis was created using the HARMONIE-AROME numerical weather prediction model. Monthly means, seasonal means and annual means are analysed and compared.