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Global solar radiation: comparison of satellite-based climatology with station records

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We analyze surface incoming shortwave radiation (SIS) from the SARAH dataset prepared by the EUMETSAT Climate Monitoring Satellite Applications Facility from satellite observations of the visible channels of the MVIRI and SEVIRI instruments onboard the geostationary Meteosat satellites. The satellite SIS data are evaluated within the period 1984-2014 on various time scales: from individual months and years to long-term climate means. The validation is performed using the ground measurements of global solar radiation (GLBR) carried out on 11 meteorological stations of the Czech Hydrometeorological Institute in the Czech Republic with at least 30 years long data series. Our aim is to explore whether the SIS data could potentially serve as an alternative source of information on GLBR outside of a relatively sparse network of meteorological stations recording GLBR.

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