



Continued positive trend in surface solar radiation over Sweden

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Since 1983 a network of automatic solar radiation stations is operated by SMHI (The Swedish Meteorological and Hydrological Institute). The stations are located at latitudes between 55.7°N and 67.8°N and global and direct irradiance are measured. During the period 1983-2018, for which a good quality and homogenous radiation database has been recorded, some clear features in the surface radiation climate show up. Significant positive linear trends in global radiation are found at all stations. Averaged over all stations the trend until 2005 was about +4 Wm⁻²/decade. From 2005 the increase is weaker but still positive. A major reason for this is the record sunny summer half year of 2018. The main reason for the increased surface solar radiation is a decrease in cloudiness leading to increased sunshine duration. In addition, measurements of direct normal irradiance also indicate a decrease in aerosol optical depth.