



Understanding the influence of solar irradiance changes on Earth's climate during the Holocene

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Solar radiation is the single most important source of energy for Earth's climate system, and its variability has long been connected to climate changes. Whereas earlier attempts to quantify this influence were hampered by difficulties in discriminating the solar signal from other sources of climate variability and by our limited knowledge of the magnitude of irradiance changes over the solar cycle and on longer timescales, our knowledge of these matters has considerably improved over the last decades, not least due to space missions tracing the irradiance changes. Nevertheless, considerable uncertainties remain. In my talk, I will review our knowledge of the influence of solar irradiance changes on Earth's climate, focussing on the climate evolution over the last millennia. In particular, the connection between the 17th-century Maunder Minimum and the "Little Ice Age" will be discussed in detail.