

Contributed Talk

Splinter Activity

SOLAR IRRADIANCE RECONSTRUCTION OVER HOLOCENE: A  
CONSISTENT MULTI-PROXY RECONSTRUCTION

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Knowledge of solar variability on different time scales is important for many research applications, from solar and stellar physics to palaeoclimatology. Direct observations of the solar irradiance and the sunspot number provide information on solar activity on time scales of decades and centuries, respectively. On longer time scales, however, one has to rely on indirect proxies, such as abundances of the cosmogenic isotopes, e.g.  $^{10}\text{Be}$  and  $^{14}\text{C}$ , in terrestrial archives. These isotopes are produced in the terrestrial atmosphere by cosmic rays, whose flux is modulated by solar activity. Therefore isotope data retrieved from various natural archives around the globe show a high degree of similarity. Nevertheless, significant short-term deviations can be observed due to other factors, e.g., the different geochemical paths in the atmosphere or local climatic conditions. We will present most recent solar total and spectral irradiance reconstruction over the Holocene based on a new consistent analysis of a composite multi-isotope proxy series covering the last 9000 years. The solar irradiance reconstruction reveals the global and robust pattern of solar variability in the past.