



Statistical analysis of Solar Irradiance

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The study of Solar irradiance and its variability, in particular in the UV and X/EUV spectral range, are of interests both for terrestrial weather, space weather, and because it tells us something about the Sun itself. Beside the radiometric calibration that is essential to study its impact on Earth, the spectral distribution of the irradiance temporal variation at all scales can reveal important information. Recently, an effort has been made to apply various statistical analysis to UV and X/EUV solar irradiance datasets acquired by different instruments: SEE onboard TIMED, SEM onboard SOHO, and SOSLTICE-SUSIM onboard UARS and SORCE. Techniques like multivariate analysis, source separation, and scaling analysis, allow us to explore several aspects of the irradiance time series and to foresee some applications, in particular in the context of space weather. We will present a review of these recent efforts.