



The cycle-dependence of Far-UV and Middle-UV solar emission: EMD analysis of SOLSTICE and Mg II signals

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The solar Far-UV and Middle-UV variability is extremely relevant for the stratospheric ozone concentration and dynamics. We investigate solar UV variability at decennial time scale using the data of SOLar-STellar Irradiance Comparison Experiment (SOLSTICE) on SORCE and Bremen Mg II composite signal. The Empirical Mode Decomposition (EMD) technique has been applied to Mg II and UV signals to separate intrinsic solar components and focus on 11-y variability.

The analysis shows that the star changes the UV spectral distribution during 11-y cycle with a different behaviour during the descending phase of cycle 23 and growing phase of cycle 24. The observed UV major evolution can provide empirically-motivated UV predictions over the cycles. On the other hand, the observed minor differences during the ascending and descending phase of solar cycle can be attributed to physical changes in solar emission or described by an uncorrected time-dependent performance of SOLSTICE UV channels. We shortly discuss both possibilities.