



Reconstruction of the solar EUV irradiance as observed with PROBA2/LYRA

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The solar EUV spectrum has important effects on the upper atmosphere of the Earth and any planet. For a detailed investigation of these effects it is important to have a consistent data series of the EUV spectral irradiance available. Here, we present the reconstruction of the solar EUV irradiance based on PSPT and SOHO/EIT images and along with synthetic spectra calculated for six different coronal features representing the brightness variation of the solar atmosphere. The EIT images are segmented with the SPoCA tool which allows to identify the features based on a consistent brightness classification for each feature. With the SOLMOD code we then calculate intensity spectra for 10 nm to 100 nm for each of the coronal feature.

Weighting the intensity spectra with the area covered by each of the features yields the temporal variation of the EUV spectrum. The reconstructed time series is then validated against the spectral irradiance as observed with PROBA2/LYRA. This is an important step towards the understanding of the variations of the solar EUV spectrum and ultimately its detailed effect on the Earth's upper atmosphere.