

NRLEUV 2: A NEW MODEL OF SOLAR EUV IRRADIANCE VARIABILITY

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NRLEUV represents an independent approach to modeling the Sun's EUV irradiance and its variability. Our model utilizes differential emission measure distributions derived from spatially and spectrally resolved solar observations, full-disk solar images, and an a database of atomic physics parameters to calculate the solar EUV irradiance. Our initial version of the model made use of Skylab spectra and a crude partitioning of solar features into quiet Sun, coronal hole, and active region components. Despite the simplicity of our initial effort, our model was able to reproduce the observed EUV irradiance variability at many wavelengths as well as most existing models based directly on observations. In this presentation we will discuss a revised version of the model that is based on extensive observations with the spectrometers on SOHO, utilizes a continuous distribution of emission measures, and includes the most comprehensive database of atomic physics parameters available. Comparisons between our model, other empirical irradiance models, and recent irradiance observations will also be discussed.