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A new solar reference spectrum from 165 to 3088 nm

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Since April 5, 2008 and until February 15, 2017 the SOLAR/SOLSPEC spectro-radiometer on the International Space Station performed accurate measurements of Solar Spectral Irradiance (SSI) from the far ultraviolet to the infrared (165 nm to 3088 nm). These measurements are of primary importance for a better understanding of solar physics and of the impact of solar variability on climate (via Earth's atmospheric photochemistry). In particular, a new reference solar spectrum is established covering most of the unusual solar cycle 24 from minimum in 2008 to maximum. Temporal variability in the UV (165 to 400 nm) is presented in several wavelengths bands. These results are possible thanks to revised engineering corrections, improved calibrations and new procedures to account for thermal and aging advanced corrections. Uncertainties on these measurements are evaluated and compare favorably with other instruments.