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ISS SOLAR Spectrometers: Solar Spectral Irradiance Variability and its 2008 Minimum

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Onboard the SOLAR payload of the International Space Station (ISS), the SOLSPEC and SolACES spectrometers measure the solar spectral irradiance (SSI) from 16 to 2900 nm. The status of their operations will be presented. In 2008, a SSI minimum occurred. Data from the SOLSPEC and SolACES spectrometers have been merged to generate a spectrum extending from 16 to 2900 nm. We shall present its properties and comparison with other instruments running at the same time. As SSI reconstructions play an important role in climate modeling to provide SSI at different epochs, we have reconstructed this spectrum using available proxies. The accuracy of these reconstructions will be also discussed.
The ISS orientation generally does not permit to permanently point the Sun. Periods of no Sun visibility varies from 14 days to a few days per month, season dependent, which consequently does not allow the measurements of the effects of the active regions during a complete solar rotation. In December 2012 a continuous period of measurements has been achieved. We shall present these measurements. For this period, a comparison between all available SSI in absolute unit will be shown as well as reconstructions using solar proxies by several models.