

Revision of the Sun's Spectral Irradiance as measured by *SORCE SIM*

Steffen Mauceri^{1,2} [steffen.mauceri@.colorado.edu], **Peter Pilewskie**^{1,2}, **Erik Richard**², **Odele Coddington**², and **Tom Woods**²

¹ *Department of Atmospheric and Oceanic Sciences (ATOC), University of Colorado, Boulder, CO, USA*

² *Laboratory for Atmospheric and Space Physics (LASP), University of Colorado, Boulder, CO, USA*

The Spectral Irradiance Monitor (SIM) instrument on board the Solar Radiation and Climate Experiment (SORCE) performs daily measurements of the solar spectral irradiance (SSI) from 200 to 2400 nm. Both temporal and spectral corrections for instrument degradation have been built on physical models based on comparison of two independent channels with different solar exposure. The present study derives a novel correction for SIM degradation utilizing the total solar irradiance (TSI) measurements from the Total Irradiance Monitor (TIM) on SORCE. The correction is applied to SIM SSI data from September 2004 to October 2012 over the wavelength range from 205 nm to 2300 nm. The change in corrected, integrated SSI agrees within 0.1 W m^{-2} (1σ) with SORCE TIM TSI and independently shows agreement with the SATIRE-S and NRLSSI2 solar models within our uncertainties.