Airborne Solar Spectral Irradiance Measurements during the MILAGRO field campaign.

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During MILAGRO, the Solar Spectral Flux Radiometer (SSFR) was used to measure up- and down-welling solar spectral (wavelength range: 0.38-2.1 microns) irradiance from onboard the Sky Research Jetstream-31 (J-31). One goal was to characterize the spectral radiative properties of aerosol layers above Mexico City, and above the Gulf of Mexico off Veracruz. We show preliminary analysis of model-measurement comparisons of irradiance under polluted and pristine conditions, using ground-based and airborne sunphotometer data, and lidar measurements from the NASA King Air along with J-31 SSFR-measured spectral irradiance. We also derive surface spectral albedo for different scenes via an iterative technique. Finally, we present two methods for determining flux divergence (that is, absorption) in an aerosol layer.