

SALSA: Solar Applied pLanetary dataSet cAlibration

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Solar Applied pLanetary dataSet cAlibration, or SALSA, is a python tool that calibrates solar irradiance from NASA's Solar Radiation Climate Experiment (SORCE) corresponding to a spectral dataset provided by the user. Solar irradiance is measured at or around the Earth so when observations are taken of another body in the solar system, this data has to be calibrated such that the solar data is corrected for the distance and position of the object being observed. Only after the solar irradiance is calibrated accordingly can measurements and analyses be done on the planetary spectra; measurements such as surface reflectance and atmospheric or surface compositions. Correcting spectral data of objects in the solar system is something a majority of planetary scientist have to do, and a coherent tool to perform these necessary calibrations does not yet exist in this way. SALSA is designed to allow planetary scientists to input their spectra of a planet or moon and it will produce a number of results. The package performs geometrical calculations, automatic data querying, kernel manipulation, point-spread function convolutions, and spectral calibrations. The program also has implemented tests and produces plots and uncertainties.