



North Polar Radiative Flux Variability from 2002 through 2014

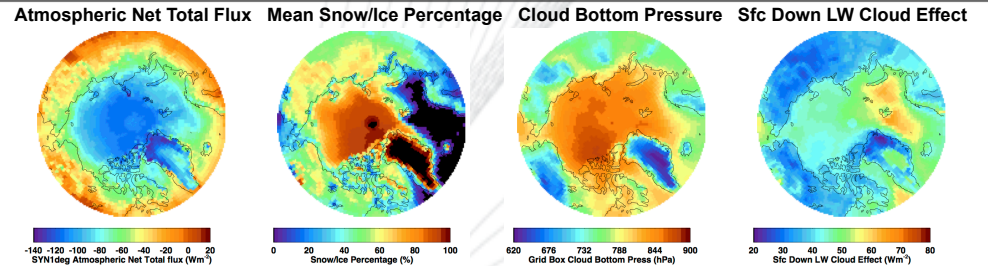


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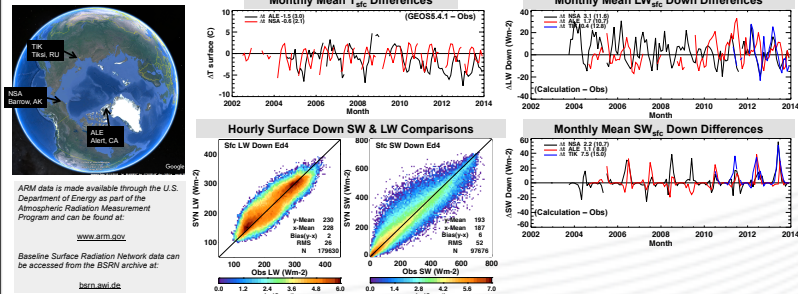
NASA's Clouds and the Earth's Radiant Energy System (CERES) project produces the SYN1Deg data product. SYN1deg provides global, 1° gridded, hourly estimates of Top of Atmosphere (TOA) (CERES observations and calculations) and atmospheric and surface radiative flux (calculations). Examples of 12 year North Polar averages of some variables are shown to the right. Given recent interest in polar science we focus here on TOA and Surface validation of calculated irradiances.

SYN1Deg data available at: https://ceres.larc.nasa.gov/order_data.php

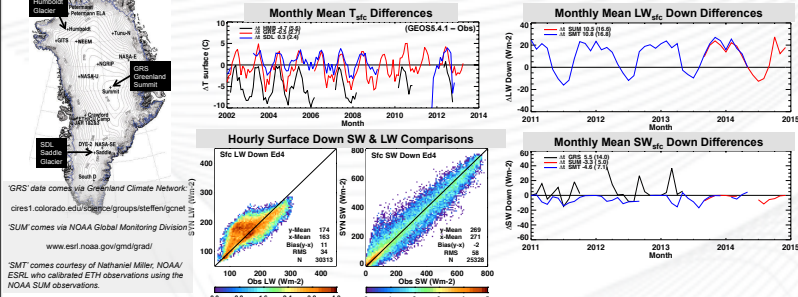


Computed Surface Flux Validation

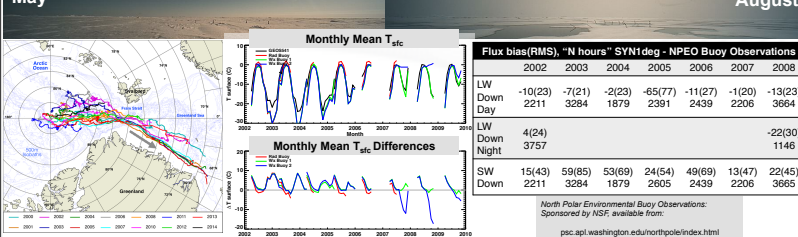
Fixed Surface Sites Tend To Be The Most Reliable



Observations In Greenland are 'Problematic'

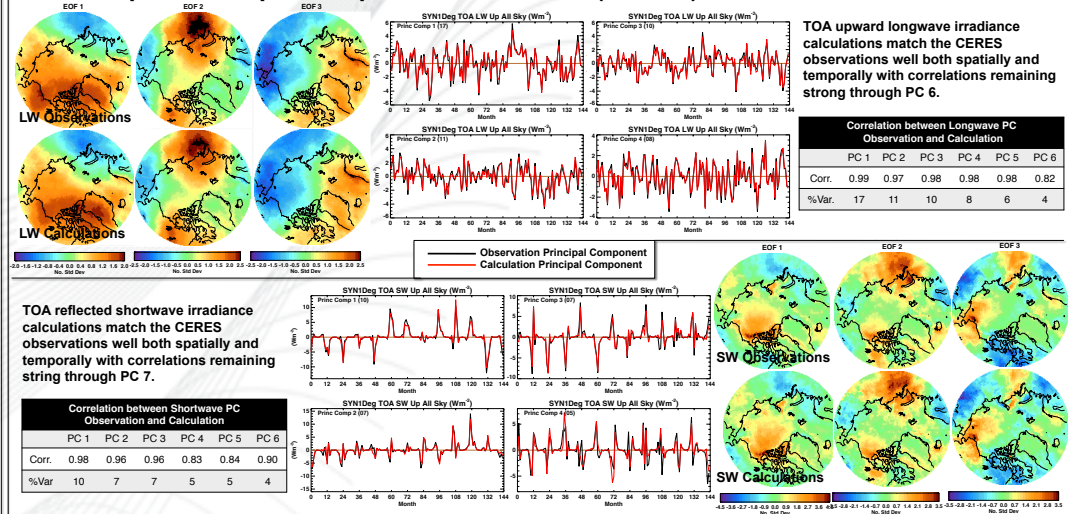


North Polar Environmental Observatories (Ice Buoys)

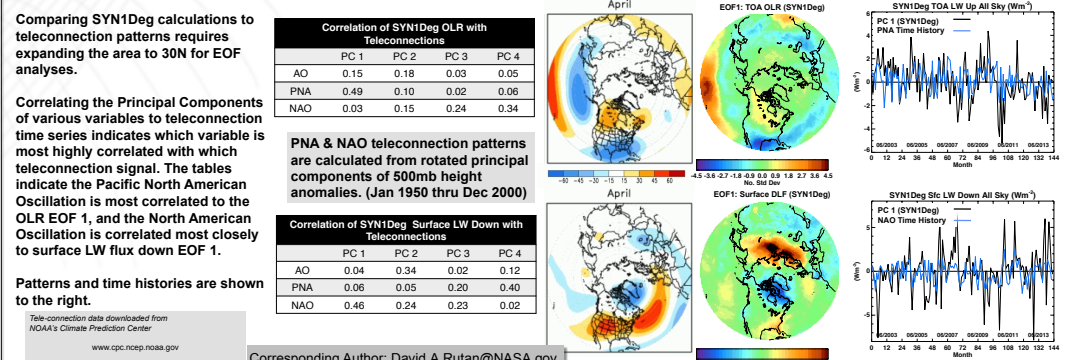


Top of Atmosphere Validation

Compare Principal Components: Observed (CERES) and Calculated Irradiance.



Compare SYN1Deg Calculations & Meteorological Teleconnections



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