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Abstract: **Simplified Reconstruction and Visual Delivery of Big Climate Data**

Samuel Shen, Julien Pierret, and Gregori Clarke
San Diego State University and Scripps Institution of Oceanography

This presentation will introduce a simplified climate data reconstruction algorithm based on multivariate regression guided by modern satellite data or climate model data. Uncertainty quantifications will be made based on the advanced theory of multivariate regression and statistical inference. Examples powered by R codes will be shown for the global surface air temperature anomalies spatially predicted by land data or oceanic data. The second part of the presentation is to demonstrate a 4-Dim visual delivery (4DVD) of big climate data developed at San Diego State University (SDSU) for NCEI. The 4DVD system takes advantage of the NOAA big data project (BDP) and can serve as an effective delivery interface for NOAA data via BDP cloud http://www.nws.noaa.gov/com/weatherreadynation/files/BigData8.3.2015.pdf . The 4DVD system allows the NOAA data to be visualized in classrooms, museums, and households.