

Special Session: Geospatial Analysis for Digital Earth

iGlobe – Next Generation Framework for Handling Geospatial Data

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The growing understanding of changing climate and its impact on the environment and society has propelled heavy research investment in the area of climate modeling resulting in sophisticated models that can capture multitudes of scenarios and produce realistic forecasts at decadal and century scale and produce simulation outputs which are a valuable data source for understanding climate change impacts. At the same time, advances in remote sensing technology have enabled measuring and storing weather data at an unprecedented rate and scale. Put together, these *Earth Observation (EO)* systems hold immense social and scientific potential in myriad of domains such as climate, sustainability, and security across the world. Unfortunately, given the heterogeneity across the board in terms of data formats, encodings, operational standards, and access interfaces, realizing the true potential of the data collected by the above-mentioned EO systems is a great challenge for the community.

We demonstrate an interactive visualization and analysis system for integrating EO data collected from space and generated by model simulations with other geospatial data sets, such as environmental and demographic data. iGlobe is a desktop based visualization and analysis environment which allows seamless integration of multiple geospatial data sets from varied sources and provides an interface to interactively analyze the different data sets and apply sophisticated data analysis and mining algorithms in a near real time fashion. The framework is highly desirable in domains such as earth and climate sciences where great emphasis is placed on simultaneous analysis of different data sets such as remote sensing images, climate model simulation outputs, and other environmental and demographic databases, to understand weather and climate systems and the impact of climate change on nature and people.