of which is color-coded to provide a semiquantitative indication of the degree of hazard posed by one aspect of the activity at the indicated location. The five aspects in question are the history of solar flares, the history of coronal mass ejections, the growth or decay of activity, the overall size, and the magnetic configuration.

Mouse-clicking on an active-region-marking dot, SRVS indicator, or NOAA region number causes the program to generate a solar-region summary table (SRT) for the active region in question. The SRT contains additional quantitative and qualitative data, beyond those contained in the SRVS: These data include the solar coordinates of the region, the area of the region and its change in area during the past 24 hours, the change in the number of sunspots in the region during the past 24 hours, the magnetic configuration, and the types, dates, and times of the most recent flare and coronal mass ejection.

This program was written by Mike Golightly of Johnson Space Center, Mark Weyland of Lockheed Martin, and Vern Raben of Raben Systems, Inc. For further information, contact the JSC Innovation Partnerships Office at (281) 483-3809. MSC-23300-1

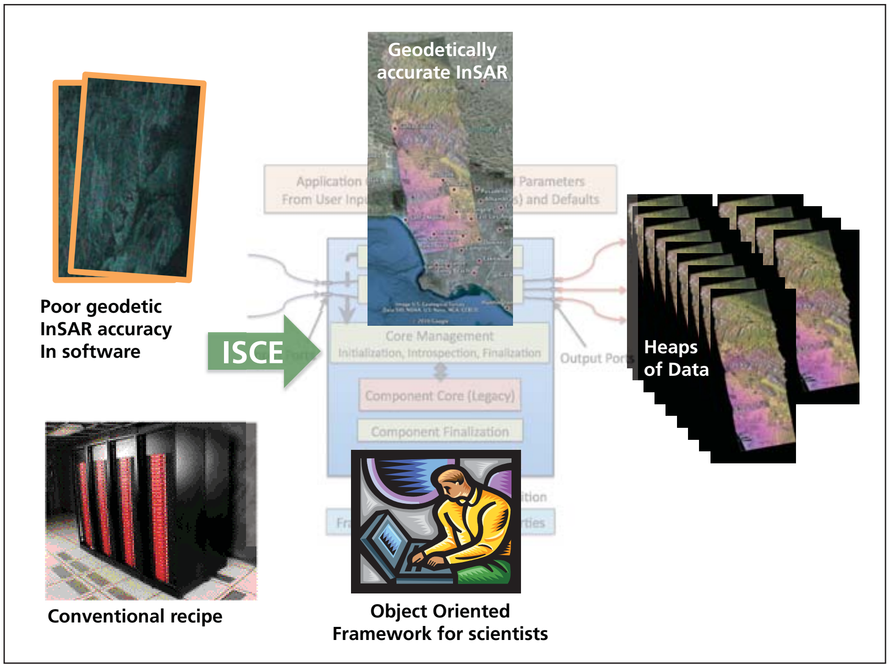
InSAR Scientific Computing Environment

NASA's Jet Propulsion Laboratory, Pasadena, California

This computing environment is the next generation of geodetic image processing technology for repeat-pass Interferometric Synthetic Aperture (InSAR) sensors, identified by the community as a needed capability to provide flexibility and extensibility in reducing measurements from radar satellites and aircraft to new geophysical products. This software allows users of interferometric radar data the flexibility to process from Level 0 to Level 4 products using a variety of algorithms and for a range of available sensors.

There are many radar satellites in orbit today delivering to the science community data of unprecedented quantity and quality, making possible large-scale studies in climate research, natural hazards, and the Earth's ecosystem. The proposed DESDynI mission, now under consideration by NASA for launch later in this decade, would provide time series and multi-image measurements that permit 4D models of Earth surface processes so that, for example, climate-induced changes over time would become apparent and quantifiable. This advanced data processing technology, applied to a global data set such as from the proposed DESDynI mission, enables a new class of analyses at time and spatial scales unavailable using current approaches.

This software implements an accurate, extensible, and modular processing system designed to realize the full potential of InSAR data from future missions such as the proposed DESDynI, existing radar satellite data, as well as data from the NASA UAVSAR (Uninhabited Aerial Vehicle Synthetic Aperture Radar), and other airborne platforms. The processing approach has been re-thought in order to enable multi-scene analysis by adding new algorithms and data interfaces, to permit user-reconfigurable operation and extensibility, and to capitalize on codes already developed by NASA and the science community. The framework incorporates modern programming methods based on recent research, including object-oriented scripts controlling legacy and new codes, abstraction and generalization of the data model for efficient manipulation of objects among modules, and well-designed module interfaces suitable for command-line execution or GUI-programming. The framework is designed to allow users' contributions to promote maximum utility and sophistication of the code, creating an open-source community that could extend the framework into the indefinite future.



The **InSAR Scientific Computing Environment** (ISCE) replaces old InSAR processing algorithms and conventional computing paradigms with modern geodetically accurate algorithms embedded at the core of a modern, flexible, and extensible object-oriented computing framework. The framework enables scientists to easily and efficiently process raw data into useful data products for their science models and investigations.

This work was done by Paul A. Rosen, Gian Franco Sacco, and Eric M. Gurrola of JPL/Caltech; and Howard A. Zebker of Stanford University for NASA's Jet Propulsion Laboratory. Further information is contained in a TSP (see page 1).

This software is available for commercial licensing. Please contact Daniel Broderick of the California Institute of Technology at danielb@caltech.edu. Refer to NPO-47557.