

plan on consistently producing products for the long-term, purchasing phase difference products from a third party is probably your best choice. Before doing this, do a thorough search to determine if other investigators are producing SAR products in your area of interest (see contacts at end of article). The cost of a third party producing interferograms of an area 100 km by 100 km is roughly \$10,000 to \$20,000, including the data. Commercial providers of these products include Vexcel Corporation (www.vexcel.com) and NPA (www.npa.com).

Coverage Is Only One Issue..

Coverage of an area by a SAR platform's footprint does not guarantee a useful product. Commonly available C-band raw data (wavelength = 5.6 cm) are strongly affected by vegetation, the presence of which can make interferometry nearly impossible. Changing atmospheric conditions, especially active storm cells during radar acquisition, also can produce perturbations that are very difficult to remove. The optimum conditions for interferometry are areas with a relatively dry climate, land with sparse vegetation, or urban environments, all of which exist in many parts of the Southwest.

ADWR will begin processing SAR data in Arizona this year. With funding assistance from NASA during the past three years and technical support from the Center for Space Research at the University of Texas in Austin and Vexcel Corporation, ADWR has determined SAR technology to be the only practical and cost-effective method to monitor the occurrence of pumping-related ground subsidence in many areas of the state. The agency plans to use these data to improve both its groundwater models and groundwater management practices.

Contact Maurice Tatlow at matatlow@adwr.state.az.us. Other users of SAR data in the Southwest include John Bell (Nevada): jbell@unr.edu; Gerald Bawden (California): gbawden@usgs.gov; and Sean Buckley (Texas and Arizona): buckley@csr.utexas.edu.

Reference

Hoffman, J., D.L. Galloway, and H.A. Zebker, 2003. Inverse modeling of interbed storage parameters using land subsidence observations, Antelope Valley, California. Water Resources Research, 39(2), 13p.