

Monitoring Land Deformation Along the Alyeska Pipeline Using Various InSAR Techniques

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Interferometry has become a proven technique for accurately measuring ground movements caused by subsidence, landslides, earthquakes and volcanoes. Using space borne sensors such as the ERS, ENVISAT and RADARSAT satellites, ground deformation can be monitored on a millimetre level. Traditionally interferometry has been limited to arid areas however new technology has allowed for successful monitoring in vegetated regions and areas of changing land-cover. Analysis of a November 2003 earthquake and other deformation along the trans-Alaskan pipeline demonstrates how techniques can offer pipeline engineers a new tool for observing potential dangers to pipeline integrity.