

Special session: Crust and ice deformation and interpretation from combined geodetic techniques (Kurt L. Feigl and Benoit Legresy, convenors)

Title: Measurement of ice motion in the Antarctic using ERS and Radarsat InSAR.

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ERS-1 and 2 collected a large volume of interferometric pairs in right looking mode over the Antarctic between 1992 to 2000. These data provided invaluable information about the ice sheet topography, vector ice motion, ice-shelf tides, and grounding lines over a large fraction of the Antarctic coast. In fall 1997, Radarsat in left looking mode collected 24-day repeat interferometric pairs extending all the way to south pole, beyond the range of capability of ERS. Based on the success of the 1997 mapping mission, Radarsat acquired a large volume of 24-day repeat interferometric pairs in right looking mode over the Antarctic in fall 2000. In this presentation, we will discuss the combined use of ERS and Radarsat InSAR for glaciological studies in the Antarctic. We will show examples of mass balance studies and ice stream stability in Pine Island Bay, West Antarctica and on Shirase Glacier and Lambert Glacier, in East Antarctica and associated ice shelves. We will show examples of detection of ice thickness and ice velocity changes over the 1992-2000 time period using data from these satellites.

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