A system for airborne SAR interferometry

Interferometric synthetic aperture radar (INSAR) systems have already demonstrated that elevation maps can be generated rapidly with single pass airborne across-track interferometry systems (XTT), and satellite repeat track interferometry (RTT) techniques have been used to map both elevation and perturbations of the surface of the Earth.

The Danish Center for Remote Sensing (DCRS) has experimented with airborne INSAR since 1993. Multiple track data are collected in a special mode in which the radar directly steers the aircraft which allows for very precise control of the flight path. Such data sets have been acquired at both L- and C-band. During 1994/95 the system was further modified to add the capability to perform single pass interferometric data acquisitions at C-band.

This paper will discuss: (1) the general principles of INSAR systems and their application to topographic mapping and (2) the status of the airborne interferometry activities at DCRS, including the present system configuration, recent results, and some scientific applications of the system.

General information
State: Published
Organisations: Department of Electromagnetic Systems
Contributors: Madsen, S. N., Skou, N., Granholm, J., Woelders, K., Christensen, E. L.
Pages: 106-111
Publication date: Mar 1996
Peer-reviewed: Yes

Publication information
Journal: AEU-ARCHIV FUR ELEKTRONIK UND UBERTRAGUNGSTECHNIK-INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS
Volume: 50
Issue number: 2
ISSN (Print): 0001-1096
Original language: English
Keywords: SAR interferometry, repeat pass interferometry, across-track interferometry, airborne SAR
Source: orbit
Source-ID: 164719
Research output: Research - peer-review > Conference article – Annual report year: 1996