An Interferometric Processing Package for Spaceborne SAR Systems

Juergen Schmidt Institute of Navigation, University of Stuttgart, Keplerstr. 11, 70174 Stuttgart.
schmidt@nav.uni-stuttgart.de
ftp://ftp.nav.uni-stuttgart.de/home.html

Abstract

Today, SAR interferometry is at a stage where full-chain interferometric processors are needed to support effective research of new applications. This paper introduces a processing package developed at the University of Stuttgart under the EASI/PACE remote sensing environment. This package was created as a very flexible system with transparent data flow. The design of the model orientated structure and the processing steps are outlined. Phase unwrapping can be performed with residue clustering or with weighted LS. Baseline estimation, DEM generation, and geocoding are included in the package. The calculation of synthetic interferograms, based on a given DEM in a map projection or as scattered points permits error analysis. We compared and implemented several baseline models. SLC data import is handled by functions which try to overcome the problems caused by changing data formats or data errors. Examples for interferometric products and results are given for the "Ostalb" area in Germany using tandem data.

Keywords: SAR Interferometry Processor, Baseline Modelling, DEM, Geocoding