

## Dem reconstruction of coastal geomorphology from dinsar

### Abstract

The paper is focused on Digital Elevation Model (DEM) reconstruction from differential interferometry synthetic aperture radar (DInSAR). In doing so, conventional DInSAR procedures are implemented to three repeat passes of RADARSAT-1 SAR fine mode data (F1). Further, the multichannel MAP height estimator is implemented with phase unwrapping technique. Consequently, the multichannel MAP height estimator is used to eliminate the phase decorrelation impact from the interferograms. The study shows the performance of DInSAR method using the multichannel MAP height estimator is better than DInSAR technique which is validated by a lower range of error ( $0.01 \pm 0.11$  m) with 90% confidence intervals. In conclusion, integration of the multichannel MAP height estimator with phase unwrapping produce accurate 3-D coastal geomorphology reconstruction.