FRINGE 96
Linear feature extraction from ERS SAR scenes using INSAR coherence maps

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Abstract

A Bayesian approach to the extraction of linear features from SAR scenes is proposed. The SAR data evaluated are the intensity and the coherence from interferometric processing. Both are analysed using a rotating template. The results are combined in the likelihood function of Bayes' theorem. Prior knowledge about the continuity of thin curvilinear structures is formulated as a Markov random field. The object parameters are determined by an approximate maximum a posteriori estimate using simulated annealing or by local highest confidence first estimation.
Keywords: line extraction, Markov random fields, SAR, coherence data