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Abstract

Phase unwrapping is a key step for interferometric synthetic aperture radar imaging. It is widely used for earth mapping and surface change detection. Several residue-immune phase unwrapping algorithms have been proposed; among them, we find branch-cut and quality-guided in the path-following category. Branch-cut methods are usually faster than the quality-guided techniques; however, the accuracy of their unwrapped phase images is lower. In this paper, a hybrid model which combines both algorithms is proposed in order to establish a satisfactory compromise between processing time and accuracy. In order to verify the usefulness of the proposed hybridization, it is tested on simulated and real inSAR data. The obtained results are compared with the two methods under several relevant metrics.