SATELLITE RADAR INTERFEROMETRY

Interferometric synthetic aperture radar (InSAR) is an active remote sensing method that uses repeated radar scans of the Earth's solid surface to measure relative deformation at centimeter precision over a wide swath. It has revolutionized our understanding of the earthquake cycle, volcanic eruptions, landslides, glacier flow, ice grounding lines, ground fluid injection/withdrawal, underground nuclear tests, and other applications requiring high spatial resolution measurements of ground deformation. This book examines the theory behind and the applications of InSAR for measuring surface deformation. The most recent generation of InSAR satellites has transformed the method from investigating 10s to 100s of synthetic aperture radar images to processing 1 000s and 10 000s of images using a wide range of computer facilities. This book is intended for students and researchers in the physical sciences, particularly for those working in geophysics, natural hazards, space geodesy, and remote sensing. This title is also available as Open Access on Cambridge Core.

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Theory and Practice

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