

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.

DAVID T. SANDWELL is a professor of geophysics at Scripps Institution of Oceanography at the University of California, San Diego. His research is focused on marine tectonics, geodynamics, and the earthquake cycle using InSAR and Global Navigation Satellite System (GNSS). He is the author of more than 200 research papers and the book *Advanced Geodynamics: The Fourier Transform Method* (2022, Cambridge University Press). He is a member of the US National Academy of Sciences.

XIAOHUA XU is a professor of geophysics at the University of Science and Technology of China. His research is focused on earthquakes, faulting, crustal deformation, and tectonic geodesy.

JINGYI CHEN is an associate professor of aerospace engineering at the University of Texas at Austin. Her research is focused on the development of InSAR techniques for studying natural and induced seismicity, groundwater resources, natural disasters, and permafrost hydrology. She is a senior member of the Institute of Electrical and Electronics Engineers and a member of the American Geophysical Union.

ROBERT J. MELLORS is a researcher at Scripps Institution of Oceanography at the University of California, San Diego. His research is focused on enhancing geophysical sensing, including InSAR, global seismic instrumentation, muons, and photonic seismology. He is currently an advisor to the US Department of Energy (Advanced Research Projects Agency – Energy) on advanced energy technologies.

MENG WEI is an associate professor of oceanography in the Graduate School of Oceanography at the University of Rhode Island. His research is focused on tectonic geodesy,

fault mechanics, coastal subsidence, and natural hazards. He has published more than 30 research papers and is a recipient of the Faculty Early Career Development Program award from the National Science Foundation.

XIAOPENG TONG is an associate researcher in the Institute of Geophysics, China Earthquake Administration, Beijing. He is a PhD from the Scripps Institution of Oceanography, University of California, San Diego. His research interests include InSAR, space geodesy, and crustal deformation.

JOHN B. DESANTO is a research scientist at the University of Washington. His primary interests lie in the fields of marine tectonics and subduction zone processes. He studies these regions directly by adapting geodetic techniques such as GNSS to the offshore environment.

QI OU is a lecturer at the University of Edinburgh. She applies big Earth observation data to understand multi-hazards induced by active tectonics, climate change, and anthropogenic activities. She is the author of several highly cited papers, a convener and speaker at the Seismological Society of America and American Geophysical Society conferences, and a recipient of a Discipline Hopping Award from UK Research and Innovation.

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Theory and Practice

DAVID T. SANDWELL

University of California, San Diego

XIAOHUA XU

University of Science and Technology of China

JINGYI CHEN

The University of Texas at Austin

ROBERT J. MELLORS

University of California, San Diego

MENG WEI

University of Rhode Island

XIAOPENG TONG

China Earthquake Administration

JOHN B. DESANTO

University of Washington

QI OU

University of Edinburgh





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