

## 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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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

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UNIVERSITY PRESS



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477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,  
New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment,  
a department of the University of Cambridge.

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Information on this title: [www.cambridge.org/9781009606233](http://www.cambridge.org/9781009606233)

DOI: [10.1017/9781009606226](https://doi.org/10.1017/9781009606226)

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University Press & Assessment.

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When citing this work, please include a reference to the DOI [10.1017/9781009606226](https://doi.org/10.1017/9781009606226)

First published 2025

*A catalogue record for this publication is available from the British Library*

*A Cataloging-in-Publication data record for this book is available from the Library of Congress*

ISBN 978-1-009-60623-3 Hardback

Additional resources for this publication at [www.cambridge.org/sandwell](http://www.cambridge.org/sandwell).

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