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Multiview Tomographic Method in the Microwave and Millimeter-Wave Bands
5.5 Nonlinear Inversion Algorithms References; 6 Acoustic and Seismic Sensors; 6.1 Overview; 6.2 Operating Principles and Sensor Physics; 6.3 Sensor Installation; 6.4 Multicomponent Techniques; 6.5 Limitations; 6.6 Future Prospects; References; 7 Auxiliary Sensors; 7.1 Overview; 7.2 Biological and Chemical Methods of Explosive Detection; 7.3 Nuclear Quadrupole Resonance; 7.4 X-ray, Gamma-ray, and Neutron Techniques; 7.5 Electric Impedance Tomography; 7.6 Infrared and Hyperspectral Systems; References; 8 Multisensor Fusion; 8.1 Preview; 8.2 Data Association; 8.3 Fusion Architectures
8.4 Probabilistic Sensor Fusion 8.5 Fuzzy Integrals for Information Fusion; 8.6 Artificial Neural Networks; 8.7 Summary; References; 9 Geophysical Applications; 9.1 Introduction; 9.2 Electromagnetic Properties of Soils; 9.3 Hydrogeophysics; 9.4 Contaminant Remediation; 9.5 Agricultural Geophysics; 9.6 Archaeology and Cultural Heritage; References; 10 Remote Sensing and Security; 10.1 Introduction; 10.2 Through-Wall Imaging and Detection; 10.3 Millimeter-WaveBand Passive Imaging; References; 11 Mine Detection; 11.1 The Landmine Problem; 11.2 Overview of Demining Techniques
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12.7 Diagnostic Methods for Concrete and Bridges by Acoustic Emission

Sommario/riassunto

This book provides readers with a solid understanding of the capabilities and limitations of the techniques used for buried object detection. Presenting theory along with applications and the existing technology, it covers the most recent developments in hardware and software technologies of sensor systems with a focus on primary sensors such as Ground Penetrating Radar (GPR) and auxiliary sensors such as Nuclear Quadruple Resonance (NQR). It is essential reading for students, practitioners, specialists, and academicians involved in the design and implementation of buried object detection sens