1. Record Nr. UNINA9911015966903321

Autore	Saritha Vara
Titolo	Remote Sensing for Environmental Monitoring / / edited by Vara Saritha, Chaitanya Baliram Pande, Raj Singh, Mohammad Shahid
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9655-46-3
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (366 pages)
Altri autori (Persone)	PandeChaitanya Baliram SinghRaj ShahidMohammad
Disciplina	363.7063
Soggetti	Environmental monitoring Geographic information systems Signal processing Environmental protection Civil engineering Environmental Monitoring Geographical Information System Signal, Speech and Image Processing Soil and Water Protection
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to Remote Sensing for Environmental Monitoring -- Fundamentals of Remote Sensing Techniques for Environmental Assessment -- Satellite Platforms and Sensors for Environmental Monitoring -- Aerial and Ground-Based Remote Sensing Technologies for Environmental Analysis -- Data Acquisition, Pre-processing, and Image Processing Techniques for Environmental Studies -- Multispectral, Hyperspectral, and Thermal Infrared Imaging for Environmental Assessment -- Microwave and Lidar Applications in Environmental Monitoring and Management -- Integration of Remote Sensing with Geographic Information Systems (GIS) for Environmental Mapping -- Remote Sensing Applications in Water Quality Monitoring and Management -- Monitoring Land Cover, Land Use Change, and

Vegetation Dynamics Using Remote Sensing -- Remote Sensing for Atmospheric and Climate Studies in Environmental Science -- Remote Sensing of Coastal, Marine Environments, and Urban Areas for Environmental Conservation -- Wildlife Habitat Assessment and Conservation with Remote Sensing Technologies -- Emerging Technologies and Future Trends in Remote Sensing for Environmental Monitoring.

Sommario/riassunto

This book introduces remote sensing for environmental monitoring, emphasizing its importance and varied applications in environmental assessment. It delineates core image interpretation and analysis principles, details satellite platforms and sensors, and explores aerial and ground-based remote sensing technologies through case studies. It includes data acquisition, preprocessing, and specialized imaging methods such as multispectral, hyperspectral, and thermal infrared imaging. Discussions extend to microwave and lidar applications and integration with GIS for environmental mapping. Chapters cover applications in water quality monitoring, land cover analysis, vegetation dynamics, atmospheric and climate studies, coastal and marine environments, urban areas, and wildlife habitat assessment. Lastly, the book explores emerging technologies and future trends in remote sensing for environmental monitoring, offering insights into potential applications, challenges, and directions.