

<<自然介质电磁散射与辐射传输信息>>

图书基本信息

书名：<<自然介质电磁散射与辐射传输信息>>

13位ISBN编号：9787030312259

10位ISBN编号：7030312252

出版时间：2011-1

出版时间：科学出版社

作者：金亚秋

页数：782

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<自然介质电磁散射与辐射传输信息>>

内容概要

《自然介质电磁散射与辐射传输信息(英文版)》作为“自然介质电磁散射与辐射传输信息”的第二卷,选自我2001—2010年期间在国际学术刊物上发表的部分学术论文。其第一卷包括1983—2000年间的工作已由科学出版社在2000年出版。这两卷书包括了我在近30年里在电磁散射、辐射传输与空间微波遥感的主要研究工作。特别在本卷中包括了我作为国家重点基础研究计划973项目“复杂自然环境时空定量信息与融合处理的理论与应用”首席科学家时期我本人发表的一些论文。这些工作包含了极化散射与合成孔径雷达(sar)遥感信息、复杂自然介质矢量辐射传输vrt、星载微波遥感数据验证、目标与环境复合电磁散射建模数值模拟、月球微波遥感五个方面的研究成果。

《自然介质电磁散射与辐射传输信息(英文版)》第一部分建立参数化建模的自然地表极化散射解与极化sar信息理论,形成理论建模、散射辐射模拟、成像模拟、反演重构的微波遥感信息正演模拟与特征反演重构链。

第二部分研究复杂自然介质矢量辐射传输理论(vrt)。

第三部分讨论星载微波遥感数据验证的理论与方法。

第四部分讨论体目标与随机粗糙面共存时复合电磁散射的理论建模与数值计算方法。

第五部分讨论中国探月工程微波探月的理论建模、反演、“嫦娥一号”数据难与雷达成像研究工作。

作者简介

金亚秋，1970年毕业于北京大学，1978年中国科学院首批公派出国研究生，1982、1983、1985年分别获美国麻省理工学院（MIT）科学硕士、电气工程师，博士学位。

现为复旦大学信息科学与工程学院教授、波散射与遥感信息教育部重点实验室主任。

国家级有突出贡献的中青年科技专家，上海市劳动模范、国家重点基础研究973项目首席科学家，IEEE Fellow、Electromagnetics Academy Fellow、IEEE Transactions on Geoscience and Remote Sensing副主编。

曾获国家自然科学奖等十多项科技奖励。

研究领域为自然环境中电磁波散射辐射传输与传播、空间遥感与对地监测信息理论与技术、复杂系统中计算电磁学等。

已在国内外发表530多篇学术论文，已出版10部学术专著与文集。

书籍目录

part 1 polarimetric scattering and sar image information
polarimetric scattering indexes and information entropy of the sar
imagery for surface monitoring
statistics of four stokes parameters in multi-look polarimetric
synthetic aperture radar (sar) imagery
terrain topography inversion using single-pass polarimetric sar
image data
automatic detection of change direction of multi-temporal ers-2 sar
images using twothreshold em and mrf algorithms
automatic detection of terrain surface changes after wenchuan
earthquake, may 2008, from alos sar images using 2em-mrf
method
analysis of the effects of faraday rotation on space-borne
polarimetric sar observation at p band
deorientation theory of polarimetric scattering targets and
application to terrain surface classification
multiparameters inversion of a layer of vegetation canopy over
rough surface from the system response function based on the
mueller matrix solution of pulse echoes
imaging simulation of polarimetric sar for a comprehensive terrain
scene using the mapping and projection algorithm
automatic reconstruction of buildings objects from multiaspect
meter-resolution sar images
three-dimensional stereo reconstruction of buildings using
polarimetric sar images acquired in opposite directions
calibration and validation of a set of multi-aspect airborne
polarimetric pi-sar data
imaging simulation of bistatic synthetic aperture radar (sar) and
its polarimetric analysis
raw signal processing of stripmap bistatic synthetic aperture
radar
phase unwrapping for sar interferometry based on an ant colony
optimization algorithm
multiple patches and center expansion algorithms for phase
unwrapping of insar images with dense residues
part 2 vector radiative transfer of complex media
iterative solution of multiple scattering and emission from
inhomogeneous scatter media
iterative inversion from the multi-order mueller matrix solution of
vector radiative transfer equation for a layer of random
spheroids
inversion of scattering from a layer of random spheroids using
iterative solutions of the scalar radiative transfer equation
an approach of the three-dimensional vector radiative transfer
(3d-vrt) equation for inhomogeneous scatter media

iterative inversion of canopy parameters and surface moisture using the multi-order mueller matrix solution of the vector radiative transfer equation
scattering and emission from inhomogeneous vegetation canopy and alien target beneath by using three-dimensional vector radiative transfer (3d-vrt) equation
iterative approach of high-order scattering solution for vector radiative transfer of inhomogeneous random media
polarimetric backscattering and shift of polarization angle from random chiral spheroids
scattering simulation for inhomogeneous layered canopy and random targets beneath canopies by using the mueller matrix solution of the pulse radiative transfer
retrievals of underlying surface roughness and moisture from polarimetric pulse echoes in the specular direction through stratified vegetation canopy
temporal mueller matrix solution for polarimetric scattering from inhomogeneous random media of non-spherical scatterers
monitoring and early warning the debris flow and landslides using vhf radar pulse echoes from layering i.and media
part 3 modeling and data validation of satellite-borne microwave remote sensing
advancement of chinese meteorological feng yun (fy) and oceanic hai yang (hy) satellite remote sensing
theory and application for retrieval and fusion of spatial and temporal quantitative information from complex natural environment
a genetic algorithm to simultaneously retrieve land surface roughness and soil wetness
monitoring sandstorms and desertification in northern china using ssm/i data and getis statistics
monitoring flooding of the huaihe river, china, in summer 2003 using characteristic indeces derived from ssm/i multitemporal observations
suspended sediment concentrations in the yangtze river estuary retrieved from the cmodis data
a hybrid algorithm of the bp-ann/ga for classification of urban terrain surfaces with fused data of landsat etm+ and ers-2 sar
a change detection algorithm for terrain surface moisture mapping based on multi-year passive microwave remote sensing (examples of ssm/i and tmi channels)
detection of snow and frost in southern china, january 2008 using amsr-e scattering and polarization indexes
data validation of chinese microwave fy-3a for retrieval of atmospheric temperature and humidity profiles during phoenix typhoon, 2008

automatic detection of main road network in dense urban area using microwave sar images

an unbiased algorithm for detection of curvilinear structures in urban remote sensing image

an algorithm for ship wake detection from the synthetic aperture radar images using the radon transform and topographical image processing

an improved minimum entropy method for refocusing the moving target image in the synthetic aperture radar observation

part 4 computational electromagnetics of scattering from randomly rough surface and volumetric objects

reconstruction of roughness profile of fractal surfaces from scattering measurement at grazing incidence

simulation of scattering from complex rough surface at low grazing angle using the gfbm/ saa method

bistatic scattering and transmitting through fractal rough dielectric surface using fbm/saa method

numerical simulation of bistatic scattering from fractal rough surface using the forward/ backward iterative method

bistatic scattering and transmitting through a fractal rough surface with high permittivity using the pbtg-fbm/saa method

numerical simulation of radar surveillance for the ship target and oceanic clutters in twodimensional model

numerical simulation of scattering from fraetal rough surface in the finite element method

numerical simulation for bistatic scattering from a target at low altitude over rough sea surface under em incidence at low grazing angle by using the finite element method

the finite element method with domain decomposition for electromagnetic bistatic scattering from the comprehensive model of a ship on and a target above large-scale rough sea surface

numerical simulation of the doppler spectrum of a flying target above dynamic oceanic surface by using the fem-ddm method

an fem approach with fft accelerated iterative robin boundary condition for electromagnetic scattering of a target with strong or weak coupled underlying randomly rough surface

parameterization of tapered incident wave for electromagnetic scattering simulation from randomly rough surface

polarimetric scattering from a layer to spatially oriented metamaterial small spheroids

fast iterative approach to difference scattering from the target above a rough surface

a hybrid analytic-numerical algorithm of scattering from an object above a rough surface

bistatic scattering from a three-dimensional object over a randomly rough surface using the fdtd algorithm

a hybrid ka-mom algorithm for scattering from a 3-d pec target

above a dielectric rough surface
analytical iterative algorithm for fast computation of scattering from multiple conductive cylinders and the image reconstruction
dual gpof/dcim for fast computation of the sommerfeld integrals and electromagnetic scattering from an object partially embedded in dielectric half-space
bidirectional analytic ray tracing for fast computation of composite scattering from an electric-large target over randomly rough surface
scattering and image simulation for reconstruction of 3d pec objects concealed in a closed dielectric box
stochastic functional analysis of propagation and localization of cylindrical waves in a twodimensional random medium
scattering simulation and reconstruction of a 3d complex target using downward- looking step-frequency radar
part 5 remote sensing of lunar surface
numerical simulation of polarimetric radar pulse echoes from lunar regolith layer with scatter inhomogeneity and rough interfaces
simulation of brightness temperature of lunar surface and inversion of the regolith layer thickness
quantitative estimation of helium-3 spatial distribution in the lunar regolith layer
sar imaging simulation for an inhomogeneous undulated lunar surface based on triangulated irregular network
an inversion approach for lunar regolith i.ayer thickness using optical albedo data and microwave emission simulation
simulation of radar sounder echo from lunar surface and subsurface structure
a primary analysis of microwave brightness temperature of lunar surface and chang-e 1 multi-channel radiometer observation and inversion of regolith layer thickness
the modeling analysis of microwave emission from stratified media of non-uniform lunar cratered terrain surface for chinese chang-e 1 observation
global inventory of helium-3 in i.unar regolith estimated by multi-channel microwave radiometer on chang-e 1
diurnal physical temperature at sinus iridium area retrieved from observations of ce-1 microwave radiometer
publication list

章节摘录

Part 1 Polarimetric Scattering and SAR Image Information Polarimetric Scattering Indexes and Information Entropy of the SAR Imagery for Surface Monitoring .. 3 Statistics of Four Stokes Parameters in Multi-look Polarimetric Synthetic Aperture Radar (SAR) Imagery .. 7 Terrain Topography Inversion Using Single-Pass Polarimetric SAR Image Data .. 17 Automatic Detection of Change Direction of Multi-temporal ERS-2 SAR Images Using Two-Threshold EM and MRF Algorithms .. 28 Automatic Detection of Terrain Surface Changes after Wenchuan Earthquake , May 2008 , from ALOS SAR Images Using 2EM-MRF Method .. 36 Analysis of the Effects of Faraday Rotation on Space-borne Polarimetric SAR Observation at P Band .. 41 Deorientation Theory of Polarimetric Scattering Targets and Application to Terrain Surface Classification .. 49 Multiparameters Inversion of a Layer of Vegetation Canopy over Rough Surface from the System Response Function Based on the Mueller Matrix Solution of Pulse Echoes .. 63 Imaging Simulation of Polarimetric SAR for a Comprehensive Terrain Scene Using the Mapping and Projection Algorithm .. 75 Automatic Reconstruction of Buildings Objects from Multiaspect eter-Resolution SAR Images .. 91 Three-Dimensional Stereo Reconstruction of Buildings Using Polarimetric SAR Images Acquired in Opposite Directions .. 109 Calibration and Validation of a Set of Multi-Aspect Airborne Polarimetric Pi-SAR Data .. 114 Imaging Simulation of Bistatic Synthetic Aperture Radar (SAR) and Its Polarimetric Analysis .. 124 Raw Signal Processing of Stripmap Bistatic Synthetic Aperture Radar .. 140 Phase Unwrapping for SAR Interferometry Based on an Ant Colony Optimization Algorithm .. 152 Multiple Patches and Center Expansion Algorithms for Phase Unwrapping of InSAR Images with Dense Residues .. 167 Polarimetric Scattering Indexes and Information Entropy of the SAR Imagery for Surface Monitoring * Jin Ya-Qiu and Chen Fei * IEEE Transactions on Geoscience and Remote Sensing , 2002 , 40 (11) : 2502-2506 This work was supported by the China State Key Basic Research Project 2001CB309401 and CNSF 49831060 , 60171009 . Statistics of Four Stokes Parameters in Multi-look Polarimetric Synthetic Aperture Radar (SAR) Imagery* Jin Ya-Qiu and Zhang Nanxiong * Canadian Journal of Remote Sensing , 2002 , 28 (4) : 610-619

编辑推荐

《Information of Electromagnetic Scattering and Radiative Transfer in Natural Media Volume 2(2011-2010)(英文版)》是由科学出版社出版发行的。

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>