DESCRIPTION

This book describes the application of polarimetric synthetic aperture radar to earth remote sensing based on research at the NASA Jet Propulsion Laboratory (JPL). This book synthesizes all current research to provide practical information for both the newcomer and the expert in radar polarimetry. The text offers a concise description of the mathematical fundamentals illustrated with many examples using SAR data, with a main focus on remote sensing of the earth.

The book begins with basics of synthetic aperture radar to provide the basis for understanding how polarimetric SAR images are formed and gives an introduction to the fundamentals of radar polarimetry. It goes on to discuss more advanced polarimetric concepts that allow one to infer more information about the terrain being imaged. In order to analyze data quantitatively, the signals must be calibrated carefully, which the book addresses in a chapter summarizing the basic calibration algorithms. The book concludes with examples of applying polarimetric analysis to scattering from rough surfaces, to infer soil moisture from radar signals.

ABOUT THE AUTHOR

JAKOB van ZYL, PhD, has been with the NASA Jet Propulsion Laboratory since 1986. He has contributed to the design and development of many SAR systems, including SIR-C, SRTM, AIRSAR, TOPSAR, and GeoSAR. In 2010, he received the Distinguished Achievement Award from the Geoscience and Remote Sensing Society of the IEEE for his contributions to
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