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Titolo	Mathematical and physical modelling of microwave scattering and polarimetric remote sensing : monitoring the Earth's environment using polarimetric radar : formulation and potential applications / / by A.I. Kozlov, L.P. Ligthart and A.I. Logvin
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Nota di contenuto	Scope of the Subject -- Description of the research program -- Outline of the monograph -- An Introduction to Mathematical and Physical Modelling of Microwave Scattering and Polarimetric Remote Sensing -- to Inverse Radar Scattering Problems -- Description of Remote Sensing by Radar Polarimetry -- Physical and Mathematical Modelling -- Summary of Available Scattering Methods -- Diagnostics of the Earth’s Environment Using Polarimetric Radar Monitoring: Formulation and Potential Applications -- Basic Mathematical Modelling for Random Environments -- Review of Vegetation Models -- Electrodynamic and Physical Characteristics of the Earth’s Surfaces -- Reflection of Electromagnetic Waves from Non-Uniform Layered Structures -- Radiowave Reflection from Structures with Internal Ruptures -- Scattering of Waves by a Layer with a Rough Boundary -- Polarimetric Methods for Measuring Permittivity Characteristics of the Earth’s Surface -- Implementing Solutions to Inverse Scattering Problems: Signal Processing & Applications -- Concluding Remarks -- Review of

	Potential Applications of Radar Polarimetry -- Historical Development of Radar Polarimetry in Russia.
Sommario/riassunto	Radar technology is increasingly being used to monitor the environment. This monograph provides a review of polarimetric radar techniques for remote sensing. The first four chapters cover the basics of mathematical, statistical modelling as well as physical modelling based on radiowave scattering theory. The subsequent eight chapters summarize applications of polarimetric radar monitoring for various types of earth environments, including vegetation and oceans. The last two chapters provide a summary of Western as well as former Soviet Union knowledge and the outlook. This monograph is of value to students, scientists and engineers involved in remote sensing development and applications in particular for environmental monitoring.