

Microwave Propagation and Remote Sensing

Atmospheric Influences with
Models and Applications

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Features

- Covers both propagation and remote sensing aspects together
- Includes mathematical methods such as free space calculations and Maxwell's equations
- Presents radiometric models using radiosonde data and various radiometric data analysis methods
- Discusses the principles of radiometry and its instrumentation
- Explains the physics behind atmospheric ducting

Summary

This book deals with both microwave propagation and remote sensing in various atmospheric and tropospheric conditions. After discussing the derived parameters of water, the text covers free space propagation, as well as conditions and constituents such as water vapor and vapor pressure, density, and ray bending. It also explores Maxwell's equations and free space loss calculations, in addition to reflection, interference, polarization of electromagnetic waves, radio refraction, and atmospheric turbulence. The author addresses effects of snow, hail, and aerosols, and he presents radiometric models and methods of measurement of water vapor, as well as frequency/multi-frequency methodology.