



# FDTD Modeling of Metamaterials: Theory and Applications

*Yang Hao, Raj Mittra*

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Artificial metamaterials have made a huge splash in antenna, microwave, and optics engineering thanks to their extraordinary electromagnetic properties. And now, modeling their unique characteristics and behaviors in electromagnetic systems just got easier. This one-stop resource gives engineers powerful finite-difference time-domain (FDTD) techniques for modeling metamaterials, complete with applications and time-saving sample FDTD scripts. This comprehensive volume provides how-to guidance in a wide range of areas that are critical to antenna design, from computing dispersion diagrams and verifying left-handedness...to characterizing the interface of metamaterial slabs. The book also reviews electromagnetic metamaterial basics and FDTD essentials, providing the foundation needed to fully understand the material.

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