

Finite Element Analysis of Antennas and Arrays

By Jian-Ming Jin, Douglas J. Riley

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- Time- and frequency-domain formulations and mesh truncation techniques
- Antenna source modeling and parameter calculation
- Modeling of complex materials and fine geometrical details
- Analysis and modeling of narrowband and broadband antennas
- Analysis and modeling of infinite and finite phased-array antennas
- Analysis and modeling of antenna and platform interactions

Recognizing the strengths of other numerical methods, this book goes beyond the finite element method and covers hybrid techniques that combine the finite element method with the finite difference time-domain method, the method of moments, and the high-frequency asymptotic methods to efficiently deal with a variety of complex antenna problems.

Complemented with numerous examples, this cutting-edge resource fully demonstrates the power and capabilities of the finite element analysis and its many practical applications.

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From the Back Cover
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About the Author

Jian-Ming Jin, PhD, is a Professor and Director of the Electromagnetics Laboratory and Center for Computational Electromagnetics at the University of Illinois at Urbana-Champaign. He authored The Finite Element Method in Electromagnetics (Wiley) and Electromagnetic Analysis and Design in Magnetic Resonance Imaging; coauthored Computation of Special Functions (Wiley); and coedited Fast and Efficient Algorithms in Computational Electromagnetics. A Fellow of the IEEE, he is listed by ISI among the world's most cited authors.

Douglas J. Riley, PhD, received his doctorate in electrical engineering from Virginia Polytechnic Institute and has over twenty years of experience in the research, development, and practical application of time-domain methods for computational electromagnetics. A Technical Fellow with the Northrop Grumman Space Technology Sector, he was previously a Technical Fellow with Northrop Grumman Mission Systems and a Distinguished Member of the Technical Staff with Sandia National Laboratories.

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