Electromagnetic fields excited in volumes with spherical boundaries

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Abstrak

This book discusses the problem of electromagnetic wave excitation in spatial regions with spherical boundaries and the accurate mathematical modeling based on numerical and analytical methods to significantly reduce the time required for developing new antenna devices. It particularly focuses on elements and systems on mobile objects of complex shape that are made of new technological materials. The experimental development of such devices and systems is an extremely time-consuming, lengthy, and expensive process. The book is intended for senior and postgraduate students and researchers working in the fields of radiophysics, radio engineering and antenna design. The authors assume that readers understand the basics of vector and tensor analysis, as well as the general theory of electrodynamics. The original results presented can be directly used in the development of spherical antennas and antenna systems for the mobile objects.