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Titolo	Wave scattering by small bodies of arbitrary shapes [[electronic resource] /] / Alexander G. Ramm
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Soggetti	Waves - Mathematics Scattering (Physics) - Mathematics Electrostatics - Mathematics Iterative methods (Mathematics) Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliography and index.
Nota di contenuto	Preface; Contents; Introduction; Chapter 1 Basic Problems; Chapter 2 Iterative Processes for Solving Fredholm's Integral Equations for Static Problems; Chapter 3 Calculating Electric Capacitance; Chapter 4 Numerical Examples; Chapter 5 Calculating Polarizability Tensors; Chapter 6 Iterative Methods: Mathematical Results; Chapter 7 Wave Scattering by Small Bodies; Chapter 8 Fredholm Alternative and a Characterization of Fredholm Operators; Chapter 9 Boundary-Value Problems in Rough Domains; Chapter 10 Low Frequency Asymptotics; Chapter 11 Finding Small Inhomogeneities from Scattering Data Chapter 12 Modified Rayleigh Conjecture and Applications Appendix A Optimal with Respect to Accuracy Algorithms for Calculation of Multidimensional Weakly Singular Integrals and Applications to Calculation of Capacitances of Conductors of Arbitrary Shapes; Problems; Bibliographical Notes; Bibliography; List of Symbols; Index
Sommario/riassunto	This book presents analytical formulas which allow one to calculate the S-matrix for the acoustic and electromagnetic wave scattering by small bodies or arbitrary shapes with arbitrary accuracy. Equations for the

self-consistent field in media consisting of many small bodies are derived. Applications of these results to ultrasound mammography and electrical engineering are considered. The above formulas are not available in the works of other authors. Their derivation is based on a mathematical theory for solving integral equations of electrostatics, magnetostatics, and other static fields. Th