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| ISBN | 1-281-89696-9 9786611896966 981-270-120-6 |
| Descrizione fisica | 1 online resource (313 p.) |
| Disciplina | 530.124 |
| Soggetti | Waves - Mathematics Scattering (Physics) - Mathematics Electrostatics - Mathematics Iterative methods (Mathematics) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| 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
