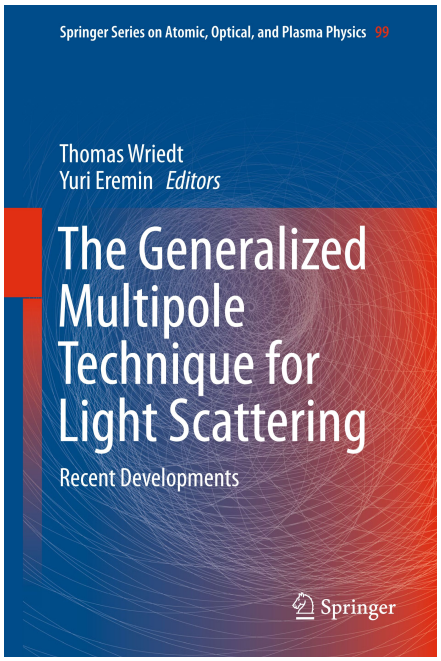

Springer

1st edition

1st ed. 2018, XVI, 249 p. 103 illus., 41 illus. in color.

Printed book
Hardcover

Printed book
Hardcover
ISBN 978-3-319-74889-4
£ 109,99 | CHF 141,50 | 119,99 € | 131,99 € (A) | 128,39 € (D)
Available

Discount group
Science (SC)

Product category
Monograph

Series
Springer Series on Atomic, Optical, and Plasma Physics

Other renditions
Softcover
ISBN 978-3-030-09098-2
Softcover
ISBN 978-3-319-74891-7

Physics : Atomic/Molecular Structure and Spectra

Wriedt, Thomas, Eremin, Yuri (Eds.)

The Generalized Multipole Technique for Light Scattering

Recent Developments

- Provides an overview of latest developments in electromagnetic and light scattering theories
- Describes a broad range of applications of generalized multipole technique
- Presents the science of plasmonic particles

This book presents the Generalized Multipole Technique as a fast and powerful theoretical and computation tool to simulate light scattering by nonspherical particles. It also demonstrates the considerable potential of the method. In recent years, the concept has been applied in new fields, such as simulation of electron energy loss spectroscopy and has been used to extend other methods, like the null-field method, making it more widely applicable. The authors discuss particular implementations of the GMT methods, such as the Discrete Sources Method (DSM), Multiple Multipole Program (MMP), the Method of Auxiliary Sources (MAS), the Filamentary Current Method (FCM), the Method of Fictitious Sources (MFS) and the Null-Field Method with Discrete Sources (NFM-DS). The Generalized Multipole Technique is a surface-based method to find the solution of a boundary-value problem for a given differential equation by expanding the fields in terms of fundamental or other singular solutions of this equation. The amplitudes of these fundamental solutions are determined from the boundary condition at the particle surface. Electromagnetic and light scattering by particles or systems of particles has been the subject of intense research in various scientific and engineering fields, including astronomy, optics, meteorology, remote sensing, optical particle sizing and electromagnetics, which has led to the development of a large number of modelling methods based on the Generalized Multipole Technique for quantitative evaluation of electromagnetic scattering by particles of various shapes and compositions. The book describes these methods in detail.

Order online at springer.com/booksellers
Springer Nature Customer Service Center GmbH
Customer Service
Tiergartenstrasse 15-17
69121 Heidelberg
Germany
T: +49 (0)6221 345-4301
row-booksellers@springernature.com

ISBN 978-3-319-74889-4 / BIC: PHN / SPRINGER NATURE: SCP24017