ASYMPTOTIC DIFFRACTION THEORY AND NUCLEAR SCATTERING

Scattering theory provides a framework for understanding the scattering of waves and particles. This book presents a simple physical picture of diffractive nuclear scattering in terms of semiclassical trajectories, illustrated throughout with examples and case studies. Trajectories in a complex impact parameter plane are discussed, and the importance of the analytic properties of the phase shift function in this complex impact plane in the asymptotic limit is stressed. Several new rainbow phenomena are also discussed and illustrated. Written by Nobel Prize winner Roy J. Glauber and Per Osland, an expert in the field of particle physics, it illustrates the transition from quantum to classical scattering, and provides a valuable resource for researchers using scattering theory in nuclear, particle, atomic, and molecular physics. This title is also available as open access on Cambridge Core.

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477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

79 Anson Road, #06–04/06, Singapore 079906

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www.cambridge.org
Information on this title: www.cambridge.org/9781107104112
DOI: 10.1017/9781316219256

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When citing this work, please include a reference to the DOI 10.1017/9781316219256

First published 2019

Printed in the United Kingdom by TJ International Ltd, Padstow Cornwall

A catalogue record for this publication is available from the British Library.

ISBN 978-1-107-10411-2 Hardback
ISBN 978-1-009-77226-6 Paperback

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