



Acta Physica Austriaca
Supplementum XVII

Proceedings of the
International Symposium
“50 Years Schrödinger Equation”
in Vienna
10th—12th June 1976

Springer-Verlag
Wien New York



Prof. Dr. Walter Thirring
Institute for Theoretical Physics
University of Vienna, Austria

Prof. Dr. Paul Urban
Institute for Theoretical Physics
University of Graz, Austria

This work is subject to copyright.

All rights are reserved, whether the whole or part of the material is concerned specifically those of translation, reprinting, re-use of illustrations, broadcast reproduction by photocopying machine or similar means, and storage in data
© 1977 by Springer-Verlag / Wien
Softcover reprint of the hardcover 1st edition 1977

Library of Congress Cataloging in Publication Data

International Symposium "50 Years Schrödinger Equation,"
Vienna, 1976.
The Schrödinger equation.

(Acta physica Austriaca : Supplementum ; 17)

I. Schrödinger equation--Congresses. I. Thirring,
Walter E., 1927- II. Urban, Paul Oskar, 1905-
III. Title. IV. Series.

QC174.26.W28I57 1976 530.1'24 77-6252

ISBN-13: 978-3-7091-7675-7

e-ISBN-13: 978-3-7091-7673-3

DOI: 10.1007/978-3-7091-7673-3

CONTENTS

URBAN, P. Introduction	1
SEXL, R. Schrödinger's Contribution to Relativity.....	7
SIMON, B. An Introduction to the Self-Adjointness and Spectral Analysis of Schrödinger Operators.....	19
HUNZIKER, W. The Schrödinger Eigenvalue Problem for N-Particle Systems.....	43
KATO, T. Stationary Theory of Scattering.....	73
GINIBRE, J. Spectral and Scattering Theory of the Schrödinger Equation for Three-Body Systems.....	95
COMBES, J.-M. The Born-Oppenheimer Approximation.....	139
KOLOS, W. Accurate Theoretical Determinations of Molecular Energy Levels.....	161
LIEB, E.H. The Stability of Matter.....	181
HERTEL, P. The Schrödinger Equation and Cosmic Bodies.....	209

PREFACE

On the occasion of the 50th anniversary of the discovery of the Schrödinger equation a small symposium was organized in Vienna. It had mainly retrospective character, where after an appreciation of Schrödinger's scientific achievements the results were collected which one could extract from his equation. Of course not all the developments which originated in Schrödingers discoveries could be included. Instead, it was attempted to present a review of the established predictions which follow directly from his equation. Despite the 50 years of its existence there are always new results of this sort being found, especially because the necessary mathematical methods are being developed and become known to the physicists slowly only now.

I want to take the opportunity here to thank the lecturers for their efforts which they put into their excellent talks and their written versions. With their help this volume should become a useful document on the current mathematical art in the treatment of the Schrödinger equation.

Finally it is my pleasant obligation to thank the Bundesministerium für Wissenschaft und Forschung and the Kulturrederei der Gemeinde Wien for their financial support which made it possible to honor one of the great Austrian scientists.

W. Thirring