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Nota di contenuto	Space-time approximations for linear acoustic, elastic, and electro-magnetic wave equations -- Local wellposedness and long-time behavior of quasilinear Maxwell equations -- Error analysis of second-order time integration methods for discontinuous Galerkin discretizations of Friedrichs' systems -- An abstract framework for inverse wave problems with applications.
Sommario/riassunto	This book presents the notes from the seminar on wave phenomena given in 2019 at the Mathematical Research Center in Oberwolfach. The research on wave-type problems is a fascinating and emerging field in mathematical research with many challenging applications in sciences and engineering. Profound investigations on waves require a strong interaction of several mathematical disciplines including functional analysis, partial differential equations, mathematical modeling, mathematical physics, numerical analysis, and scientific computing. The goal of this book is to present a comprehensive introduction to the research on wave phenomena. Starting with basic models for acoustic, elastic, and electro-magnetic waves, topics such as the existence of solutions for linear and some nonlinear material laws, efficient discretizations and solution methods in space and time, and the

application to inverse parameter identification problems are covered. The aim of thisbook is to intertwine analysis and numerical mathematics for wave-type problems promoting thus cooperative research projects in this field.