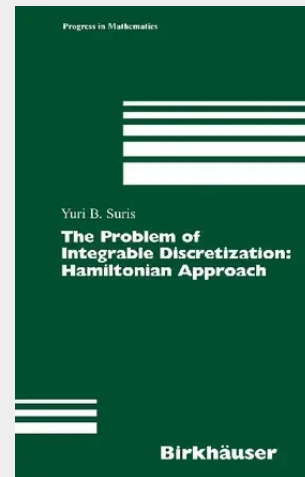


The Problem of Integrable Discretization

Hamiltonian Approach

The book explores the theory of discrete integrable systems, with an emphasis on the following general problem: how to discretize one or several of independent variables in a given integrable system of differential equations, maintaining the integrability property? This question (related in spirit to such a modern branch of numerical analysis as geometric integration) is treated in the book as an immanent part of the theory of integrable systems, also commonly termed as the theory of solitons. Most of the results are only available from recent journal publications, many of them are new. Thus, the book is a kind of encyclopedia on discrete integrable systems. It unifies the features of a research monograph and a handbook. It is supplied with an extensive bibliography and detailed bibliographic remarks at the end of each chapter. Largely self-contained, it will be accessible to graduate and post-graduate students as well as to researchers in the area of integrable dynamical systems. Also those involved in real numerical calculations or modelling with integrable systems will find it very helpful.

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