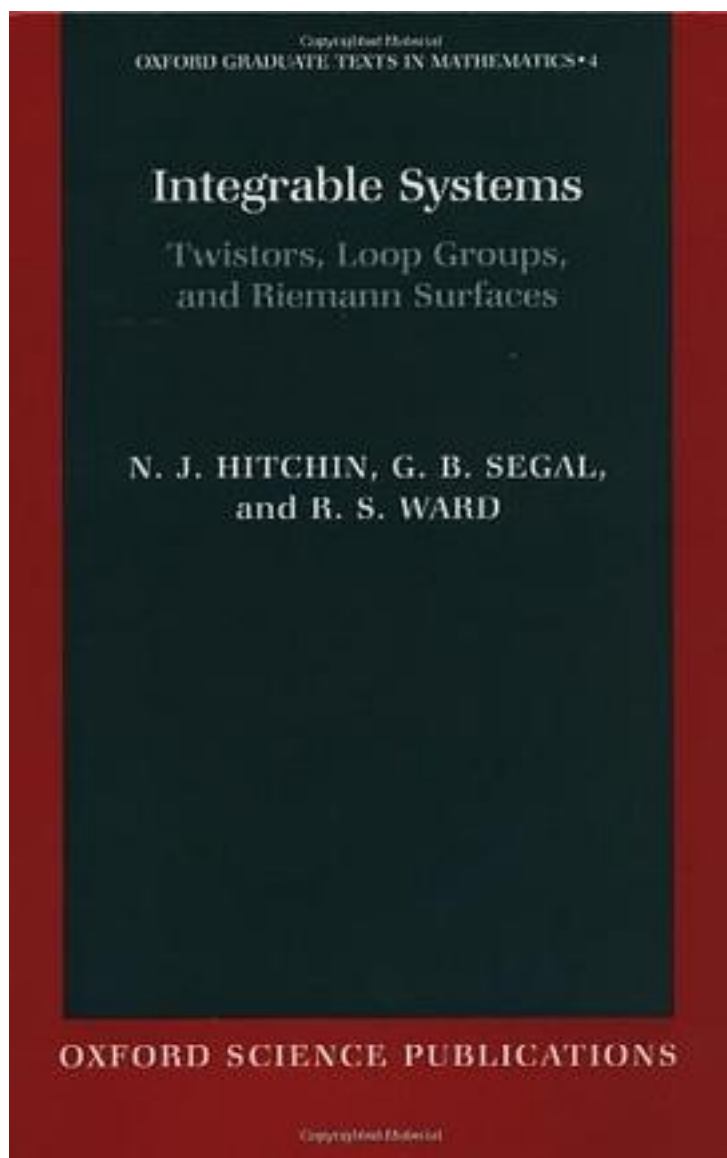


Integrable Systems



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著者:N. J. Hitchin

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This textbook is designed to give graduate students an understanding of integrable systems via the study of Riemann surfaces, loop groups, and twistors. The book has its origins in a series of lecture courses given by the authors, all of whom are internationally known mathematicians and renowned expositors. It is written in an accessible and informal style, and fills a gap in the existing literature. The introduction by Nigel Hitchin addresses the meaning of integrability: how do we recognize an integrable system? His own contribution then develops connections with algebraic geometry, and includes an introduction to Riemann surfaces, sheaves, and line bundles. Graeme Segal takes the Kortewegde Vries and nonlinear Schrodinger equations as central examples, and explores the mathematical structures underlying the inverse scattering transform. He explains the roles of loop groups, the Grassmannian, and algebraic curves. In the final part of the book, Richard Ward explores the connection between integrability and the self-dual Yang-Mills equations, and describes the correspondence between solutions to integrable equations and holomorphic vector bundles over twistor space.

作者介绍:

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标签

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评论

代数几何的本质是超越的，与可积系统关联。椭圆函数，KdV方程孤子解，杨米尔斯都是超越（哈密尔顿力学=辛几何）与代数几何的关系。

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书评

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