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Solitons: an introduction. (English) Zbl 0661.35001

Cambridge Texts in Applied Mathematics. Cambridge etc.: Cambridge University Press. xii, 226 p. £32.50/hbk; £11.95/pbk; \$ 59.50/hbk \$ 19.95/pbk (1989).

This is a well written and relatively simple textbook on the inverse scattering transform and related topics for senior undergraduate students. Basic attention is paid to the Korteweg-de Vries equation. Besides the inverse scattering transform proper (including its generalizations in the Ablowitz - Kaup - Newell - Segur and Zakharov - Shabat forms), some special issues, such as Hirota's method, the Bäcklund transformation, and the Painlevé property, are addressed. Each chapter is completed by useful exercises. In the end of the book, answers to those exercises are given.

Reviewer: [B.A.Malomed](#)

MSC:

- [35-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to partial differential equations
- [35Q99](#) Partial differential equations of mathematical physics and other areas of application
- [35A30](#) Geometric theory, characteristics, transformations in context of PDEs

Cited in **408** Documents

Keywords:

inverse scattering transform; Korteweg-de Vries equation; Hirota's method; Bäcklund transformation; Painlevé property