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Chapter 1 was expanded by a discussion of the discovery of solitons in the field of electromagnetic waves and optics. A new section devoted to nonlinear transmission lines and their applications in the microwave range has been added to Chap. 3. It seems to me that it was important to describe laboratory experiments on modulational instability, and subsequent generation of solitons, both in electrical transmission lines and in deep water in Chaps. 4 and 5. A description of a very simple experimental pocket version of the mechanical transmission line has been included in Chap. 6. Such a versatile and useful device should stimulate a practical approach to soliton physics. Chapter 7 was completed by a short presentation of some recent experimental results on discrete Josephson transmission lines. A discussion of the experimental modulational instability of coupled optical waves and a simple look at quantum solitons were added to Chap. 8 in order to introduce the reader to such remarkable topics.

1 Basic Concepts

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