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Sommario/riassunto	This extensive and comprehensive collection of lectures by world-leading experts in the field introduces and reviews all relevant computer simulation methods and their applications in condensed matter systems. Volume 1, published as LNP 703 (ISBN 3-540-35270-8) is an in-depth introduction to a vast spectrum of computational techniques for statistical mechanical systems of condensed matter. It will enable the graduate student and both the specialist and nonspecialist researcher to get acquainted with the tools necessary to carry out numerical simulations at an advanced level. The present volume is a state-of-the-art survey on numerical experiments carried out for a great number of systems, ranging from materials sciences to chemical biology, such as supercooled liquids, spin glasses, colloids, polymers, liquid crystals, biological membranes and folding proteins.