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	The Luttinger Liquid and Integrable Models Jesko Sirker1. Introduction; 2. Quantum Integrability; 2.1. Consequences for transport; 2.2. Consequences for thermalization in closed systems; 3. Low-Energy Description of the XXZ Model; 3.1. Irrelevant operators in the finite field case; 3.2. Irrelevant operators for zero field; 4. The Bethe Ansatz Solution; 5. Fixing Parameters of the Luttinger Model Using Integrability; 5.1. Velocity and Luttinger liquid parameter; 5.2. Coupling constants of irrelevant operators; 5.2.1. The zero field case; 5.2.2. The finite field case; 6. Applications 6.1. Impurities, Friedel oscillations and nuclear magnetic resonance6.2. The spin-lattice relaxation rate and transport; 7. Conclusions; Acknowledgments; References; Long Time Correlations of Nonlinear Luttinger Liquids Rodrigo G. Pereira; 1. Introduction; 2. Breakdown of LL Theory by Band Curvature Effects; 3. High Energy Contributions to Time-Dependent Correlation Functions; 4. Long Time Decay at Finite Temperatures; 5. Conclusion and Outlook; Acknowledgments; References; An Expanded Luttinger Model Daniel C. Mattis; 1. Introduction; 2. Review of the (Original) Dispersionless Model 3. Neglect of Exchange Terms4. Important Features of the Original Luttinger Model; 5. Dispersion: The New Feature; 6. Notation; 7. Equations of Motion in the Generalized Model; 8. Eigenvalue Equation at Long Wavelengths; 9. Attractive Versus Repulsive Forces; 10. Conclusion; Appendix A; References; Chapter III: Applications and Experimental Test; Quantum Hall Edge Physics and Its One- Dimensional Luttinger Liquid Description Orion Ciftja; 1. Introduction; 2. Luttinger Liquid and Bosonization; 3. Quantum Hall Edge States 4. Luttinger Liquid Description of Quantum Hall Edge States
Sommario/riassunto	The Luttinger Model is the only model of many-fermion physics with legitimate claims to be both exactly and completely solvable. In several respects it plays the same role in many-body theory as does the 2D Ising model in statistical physics. Interest in the Luttinger model has increased steadily ever since its introduction half a century ago. The present volume starts with reprints of the seminal papers in which it was originally introduced and solved, and continues with several contributions setting out the landscape of the principal advances of the last fifty years and of prominent new dire