

formulation allows for the treatment of important effects—such as the intrinsic width of the collective excitations due to electron–electron interactions—that are inaccessible in a simple adiabatic approximation. The authors also discuss with authority the state-of-the-art microscopic theory for Landau parameters in a normal Fermi liquid. Recently, Fermi liquid and non-Fermi liquid theories have attracted considerable attention because of phenomena in the 2D, low-density electron liquid in semiconductor heterojunctions, where the role of interactions is particularly important. Readers can also find, for the first time in a textbook that I have seen, the renormalized Hamiltonian approach, a transparent method to obtain an approximate quasiparticle effective Hamiltonian.

The book's overall treatment of the above topics is in some sense to be expected; the authors are leaders in the field and have contributed substantially to it. However, the book contains much more. It also offers a full chapter on the Luttinger-liquid theory, with diligent coverage of Duncan Haldane's bosonization approach. All the main pillars of that approach and its physical consequences are explained in fewer than 50 pages. Similarly, for readers who want to learn or refresh their knowledge of the most exotic behaviors encountered in electron fluids, such as the quantum Hall effect, fractionally charged quasiparticles, or composite fermions, Giuliani and Vignale beautifully spell out those concepts in a self-contained form.

*Quantum Theory of the Electron Liquid* is enriched with 25 mathematical appendices elaborating on technical details. The appendices, coupled with the many exercises at the end of each chapter, make the book an unparalleled reference. Every graduate student and

researcher studying condensed matter theory should obtain a copy of this exceptional text.

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