

MICROSCOPIC DERIVATION OF THE GINZBURG-LANDAU  
MODEL

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We present a rigorous derivation of the celebrated Ginzburg-Landau (GL) theory, starting from the microscopic Bardeen-Cooper-Schrieffer (BCS) model. Close to the critical temperature, GL arises as an effective theory on the macroscopic scale. The relevant scaling limit is semiclassical in nature, and semiclassical analysis, with minimal regularity assumptions, plays an important part in our proof.

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