

Lecture 15: Electron-electron interaction: Hartree-Fock approximation

The Slater determinant is introduced as a trial wavefunction and the Hartree-Fock equation is derived. Koopman's Theorem is stated and explained. The concept of the exchange hole is discussed, leading to the estimate of the exchange energy as $-e^2 k_F$.

Reading: Marder 9.2.1, 9.2.2