

Quantum gases and superfluidity

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I give a theoretical description of superfluidity in Bose- and Fermi-gases.

For a Bose gas, the Bose-Einstein condensation will be thoroughly discussed, together with its consequences for physical properties and macroscopic quantum behavior of the system. For a Fermi gas, starting from properties of a normal Fermi gas, I then analyze the BCS pairing instability and discuss its consequences.