Part V
Macroscopic Quantum Models

In the following chapters, we derive macroscopic quantum models from a Wigner–Boltzmann equation. In analogy to the classical situation, we define quantum equilibrium states and employ moment methods and Chapman–Enskog expansion techniques. As a result, we obtain quantum analogues of the semi-classical model hierarchy, consisting of (quantum) drift-diffusion, energy-transport, and hydrodynamic models.