Quantum quenches, transport properties and thermalization in optical lattices

Ulrich Schneider
Department of Physics, University of Cambridge, United Kingdom
https://www.phy.cam.ac.uk/directory/schneideru
uws20@cam.ac.uk

In this first lecture I will start with a very brief review of optical lattices and then discuss several examples of quantum quenches and how we use them to characterize transport far away from the linear response regime. I will also discuss questions of quantum thermalization in these isolated quantum systems.

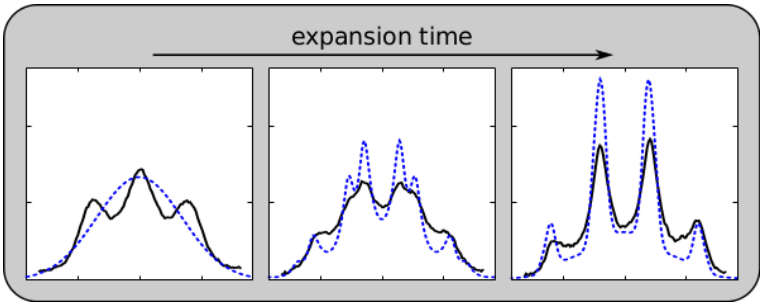

Figure 1: Evolving momentum distribution of hard-core bosons during sudden expansion.