Electronic transport from first-principles: electrons, phonons, and Wannier functions

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I'll provide a brief overview on the current state-of-the-art in the calculation of transport properties from first-principles, with a focus on electronic ballistic transport in a maximally-localized Wannier function representation, complemented with examples where inelastic scattering becomes relevant, and quantum or classical transport equations are solved using el-ph and ph-ph scattering rates calculated from first-principles.

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