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## Numerical study of strongly out-of-equilibrium thermalization dynamics

The recent developments in laser physics have given experimental access to the femto-second timescale. Femto-second lasers can be used to produce strongly out-of-equilibrium electronic distributions as well as to probe electronic systems while thermalization. However, the theoretical description of scattering for systems with multiple bands and real band-structures proves to be a difficult problem. We develop methods to numerically simulate scattering dynamics for realistic systems with several bands and ab-initio band-structures. We are also interested in thermalization dynamics of highly correlated systems for which we investigate the applicability of different methods.