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**Cold atoms in 1D**

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Ultracold atoms in optical lattices present a wealth of phenomena in one-dimensional geometries. In this talk, I will focus on specifically one-dimensional phenomena such as spin-charge separation in fermionic systems and the bosonic counterpart, as well as models of collective magnetism realized in ultracold atom systems. Special emphasis will be given to the observation of coherent quantum dynamics far from equilibrium which we can now simulate using the time-dependent density-matrix renormalization group method, in order to use cold atoms to address questions of relaxation to steady states in interacting quantum systems.