Abstract:

I'll first provide an introduction on how to extract the Density-Functional-Theory (DFT) Kohn-Sham (KS) potentials from many particle wave function techniques, e.g. from Density-Matrix-Renormalization-Group methods (DMRG). Second I'll show how one can apply machine learning techniques to construct a DFT-Functional from those calculations and provide an example for disordered, interacting 1D Fermions. The rather informal seminar is intended to stimulate discussion on the application of neural networks in physics.