

Introduction to numerical methods for correlated spin-orbit problems

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We review the dynamical mean-field theory method (DMFT), a sophisticated approach to treat correlated electron problems. In the last decades, DMFT became one of the standard approach to describe subtle quantum mechanical effects in transition metal oxides (TMO). More recently, it was extended to the 5d TMO compounds, where the spin-orbit coupling plays a significant role. Here, we give an introduction to the DMFT method and its implementation for simple examples, and review some of the recent applications of DMFT to the iridates and osmates materials.