

Dynamical Mean Field Theory

– Beyond infinite dimensions and single sites –

Mark Jarrell

Department of Physics, University of Cincinnati
Cincinnati, Ohio USA

Quotes from various advocates:

“Dynamical Mean Field Theory has traditionally neglected momentum-dependence of the electron self-energy while including the correlated dynamics of electrons as they hop onto and off of lattice sites.” ... “The extension of the method to clusters in k space and clusters in real space has been proposed to include spatial fluctuations.” ... “A major challenge to DMFT is the context of electronic structure calculations of correlated materials, in combination with state of the art DFT-LDA techniques. Several groups have made significant progress towards this goals. The method has been recently used to investigate the excited states spectrum of transition metal oxides, the localization/delocalization issue in f -electron materials and the magnetism of transition metals.”