

CONDENSED MATTER SEMINAR

Thursday 18 January at 14:30

Simpkins Lee room

“Towards an ab-initio theory of localization for correlated electrons”

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Great progress has been made in recent years towards understanding the properties of disordered electronic systems. This is made possible by recent advances in quantum effective medium methods which besides Dynamical Mean-Field Theory include the Coherent Potential Approximation, and their cluster extension, the Dynamical Cluster Approximation. The recently developed typical medium dynamical cluster approximation captures disorder-induced localization and provides a possible order parameter for the Anderson localized states. We present an overview of various recent applications of the typical medium single-site and dynamical cluster approximation to the Hubbard model, and its combination to realistic systems in the framework of Density Functional Theory.

Host: Prof Amalia Coldea