

Computational Studies of Realistic Multiband Models of the Copper Oxides

Dr Cedric Weber

(King's College London)

Recent advances in computational modelling of the cuprates will be presented. The cuprates present a great challenge to theorists, in particular due to their very rich physics. A few aspects are especially difficult to grasp at the level of the theory, in particular the recent observation of orbital currents in some of the cuprates. Another aspect is the strong asymmetry between electron and hole doping observed in NCO and LCO compounds. Other aspects, such as the formation of Fermi arcs and high energy kinks in the dispersion will also be put in context with the recent numerical approaches to the cuprates. A rapid overview of the different theoretical pictures for the cuprates will be given and discussed in the context of the latter experiments.