Screening and Hubbard interactions in strongly correlated materials

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The strength of the local Coulomb interaction U in strongly correlated materials is determined by screening processes. As recently shown also by first-principle calculations, in some cases the resulting strong frequency-dependence of U suggests that effective static values may be inappropriate for an accurate description of the dynamic properties on the energy scales of interest. Here we discuss a possible approach to deal with the dynamically screened U in the dynamical mean field (DMFT) framework and its effects on the photoemission spectrum. We discuss implications for transition metal oxides.