Abstract

„Disorder induced loop currents in high-Tc superconductors“

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The so-called cuprates are high-temperature superconductors that exhibit a variety of interesting physical phenomena, some of whose details are not yet fully understood. Depending on temperature and doping, these materials exhibit several distinct phases, such as the "pseudogap phase", the "strange metal phase" and the superconducting phase, all of which are characterized by unique physical behavior. In the superconducting phase, equilibrium loop currents are predicted from theory, if inhomogeneities are present in the system. Their occurrence depends mainly on the symmetry of the (local) order parameter that characterizes the superconducting state, but also electronic correlations and the impurity concentration play an important role. My presentation offers an introduction to this topic and highlights the results of the investigations I have conducted so far as part of my doctoral thesis.