

Overview on Superconductivity Research in Quantum Phenomena Group

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Superconductivity is one of the most fascinating phenomena in condensed matter since its macroscopic behavior is apparently originated from the quantum mechanics of electrons: Formation of electron pairs that are bound together via a small attractive interaction between them, also called Cooper pairs. Over several decades, dedicated theoretical works revealed that collective motions of either atoms or spins, which are precisely measurable physical quantity via neutron scattering, are the most important ingredient for Cooper pairing. In this talk, I will introduce how the neutron scattering study contributes to the superconductivity research field by presenting a few recent example cases from Quantum Phenomena group at MLZ.

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