

Quantum criticality in low dimensional organic superconductors

Claude Bourbonnais

Institut Quantique, Département de physique, Université de Sherbrooke, Québec, Canada

The first organic superconductors to be discovered, the so-called Bechgaard salts series, stand out among the primary examples of low dimensional materials showing the emergence of a superconducting dome on the border of an unstable antiferromagnetic metal under pressure. This pattern is a paradigmatic illustration of Cooper pairing formation out of an unconventional metallic state dominated by quantum critical magnetic fluctuations. In this talk, I review the recent progress achieved from scaling theory in the attempt to understand the quantum origin of the deviations from the Fermi liquid theory, as they can be revealed experimentally in transport and spectroscopic experiments, and how these are intimately linked to the unconventional nature of superconductivity in these materials.