

Pairing in the iron arsenides studied by the functional renormalization group

Carsten Honerkamp

University of Würzburg

The mechanism and structure of the superconducting pairing in the iron arsenides iron has been studied intensively by experiments and theory. As the strength of the local correlations is moderate, the functional renormalization group (fRG) should be an ideal tool to investigate the emergence of the superconducting instability in these systems. Here we discuss the recent fRG studies of the superconducting order parameter and the phase diagrams of these materials. The analysis of gap anisotropies and possible time-reversal-symmetry-breaking superconducting states indicates that further work is needed for a precise theoretical description.