

Evolution of the d-wave pairing symmetry in overdoped YBCO

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Elucidating the pairing symmetry in the overdoped cuprates is an important step in understanding the physics in the high- T_c superconductors. Phase-sensitive experiments on overdoped YBCO show a predominant d-wave pairing symmetry, however tunneling spectroscopy measurements suggest the presence of a subdominant +is/id. or +s component. Specifically, there has been considerable debate on whether the sub-gap spectral features observed in overdoped tunnel junctions are a signature of a +is/id. or a signature of a +s component. To resolve this issue, we have performed scanning tunneling spectroscopy measurements on overdoped {001} oriented YBCO thin films to systematically examine the evolution of these sub-gap features. Our results indicate the presence of a +s component, however other interpretations for the sub-gap features are also considered.