

Abstract Submitted
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Reconciling STS and ARPES data for the correlated superconductor LiFeAs JONGBAE HONG, Center for Theoretical Physics of Complex Systems, Institute for Basic Science, DAVID ABERGEL, Nordita, KTH Royal Institute of Technology and Stockholm University, Roslagstullsbacken 23, SE-106 91 Stockholm, Sweden — The inconsistency between the density of states revealed by scanning tunneling spectroscopy (STS) and that given by angle-resolved photoemission spectroscopy (ARPES) is a substantial problem for understanding the nature of strongly correlated superconductors such as Fe-based LiFeAs and the cuprates. We reveal that the two side peaks commonly appearing in both pnictide and cuprate superconductors are the result of the non-equilibrium behavior associated with singlet cotunneling from the tip to the strongly correlated sample [1]. We accurately reproduce the STS line shape of the Fe-based LiFeAs using a sample density of states which coincides with ARPES data, thereby producing a unified description for these materials. [1] Jongbae Hong and D.S.L. Abergel, arXiv:1411.5532.

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