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Interplay between induced superconductivity and Luttinger liquid behavior in carbon nanotubes GANG LIU, YONG ZHANG, CHUN NING LAU — Superconductors and Luttinger Liquids (LL) are two prototypical strongly correlated electron systems. In a Josephson junction where the normal metal is a LL rather than a Fermi Liquid, the Cooper pairs are expected to decay as a power law the distance between the superconductors. Here we experimentally investigate the interplay between LL and superconductivity by coupling individual single-walled carbon nanotubes to superconducting leads. Low bias conductance peaks induced by proximity effects are observed, and induced superconductivity in nanotubes are examined as a function of inter-electrode spacing. Latest experimental results will be discussed in terms of various theoretical models.

Gang Liu

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