

Abstract Submitted
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Calculation of superconductor-normal metal point contact conductance with finite gap decay length VLADIMIR LUKIC, University of Illinois at Urbana-Champaign — A numerical method is developed for the calculation of differential conductance in superconductor-normal metal contact junctions using the Bogoliubov-De Gennes equations beyond the Blonder-Tinkham-Klapwijk (BTK) approximation. Effects of finite lengthscales of gap onset and contact potential are calculated self-consistently, and exact quasiparticle momenta are retained. For a physical choice of the parameters, the combination of these effects produces a significant departure from the BTK conductance, most notably a suppression of the excess current above the gap.

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