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Superconductor-normal metal contact conductance of a graph node VLADIMIR LUKIC, ELISABETH NICOL, University of Guelph — We study the conductance of a superconductor-normal metal (SN) contact with the topology of a graph node. We derive the extension of the Blonder-Tinkham-Klapwijk (BTK) equations using the boundary conditions for a wavefunction at a graph node, and show that in the appropriate limit they reduce to the standard BTK formula for an SN contact. Qualitatively new conductance features arise from crossed Andreev reflection and interference of partially reflected waves from different graph legs, and we demonstrate their importance by using the Landauer method to rederive the formula for conductance. The relevance of these effects to experiment will be discussed.

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