Title:	Low-energy excitations and non-BCS superconductivity in Nbx−Bi2Se3
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Abstract:	When certain elemental metals such as Cu, Sr, and Nb are intercalated between the layers of Bi2Se3, a topological insulator, the intercalated systems superconduct with critical temperatures around 3 K. Naturally, in all these cases the possibility of topological superconductivity was suggested and explored. However, in cases of Cu and Sr intercalated systems, the low-temperature scanning tunneling microscopy (STM) experiments revealed fully formed gaps where no signature of low-energy states, a requisite for topological superconductivity, was found. Here, through STM spectroscopy down to 400 mK we show that in Nbx−Bi2Se3 (x=0.25), the spectra deviate from a BCS-like behavior, and the tunneling conductance at low bias is large. Our observations are consistent with the idea that the order parameter of Nbx−Bi2Se3 is nodal. Therefore, our results conclude that compared with other members of the family, Nbx−Bi2Se3 has a stronger possibility of being a topological superconductor.
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