

JETP Letters 2003 vol.78 N9, pages 555-559

Oscillations of superconducting transition temperature in strong ferromagnet-superconductor bilayers

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Abstract

The superconducting transition temperature T_c of a "clean ferromagnet-dirty superconductor" bilayer is calculated using boundary conditions derived for the quasiclassical Green's function. This combination corresponds to the majority of experiments, in which Fe, Ni, Co, or Gd are used as a material for the ferromagnetic layer. It is shown that T_c oscillates upon changing thickness of the ferromagnetic layer, in accordance with the experimental observations. © 2003 MAIK "Nauka/Interperiodica".

<http://dx.doi.org/10.1134/1.1641483>
