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Quasi-one-dimensional FFLO state in the Nb/Ni layered system

A. S. Sidorenko, V. I. Zdravkov, A. A. Prepelitsa, C. Helbig, Y. Luo, S. Gsell, M. Schreck, S. Klimm, S. Horn, L. R. Tagirov, R. Tidecks

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Abstract

We investigated Nb/Ni bilayers prepared by DC magnetron sputtering on glass substrates. The quality of the films was characterized by small-angle X-ray diffraction analysis. The thickness of the layers was determined by the Rutherford Back Scattering (RBS) technique. We observed distinct oscillations of the superconducting critical temperature for specimens with constant Nb layer thickness upon increasing the thickness of the Ni layer. The results are interpreted in terms of Fulde-Ferrell-Larkin-Ovchinnikov (FFLO) like inhomogeneous superconducting pairing in the ferromagnetic Ni layer.