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**Dimensionality crossover in ferromagnetic/superconducting films: Role of magnetic history**[1] LUIS RUIZ-VALDEPEÑAS, Universidad Complutense Madrid (Spain), FERNANDO VALDES-BANGO, LUIS ALVAREZ-PRADO, JOSE MARTIN, Universidad Oviedo (Spain), ELENA NAVARRO, Universidad Complutense Madrid (Spain), MARIA VELEZ, JOSE ALAMEDA, Universidad Oviedo (Spain), JOSE VICENT, Universidad Complutense Madrid (Spain)
— Amorphous $NdCo_5$ films are ferromagnetic samples with a weak perpendicular magnetic anisotropy which can show small magnetic domain sizes (less than 100 nm) with labyrinthine structures. Sputtering technique is used to fabricate Nb/Al(5nm)/ $NdCo_5$ superconducting films on Si substrates. The temperature dependence of the upper critical field shows features which could be related to an "imprinting" of the domain structure of NdCo5 layers in the superconducting Nb film. This peculiar proximity effect governs the superconductivity dimensionality crossover from 1D to a regime between 1D and 2D typical of superconducting wire network. This superconducting crossover can be connected to the $NdCo_5$ magnetic history.

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