

MAGNETISM VIA SUPERCONDUCTIVITY
IN SUPERCONDUCTOR—FERROMAGNET
PROXIMITY STRUCTURES

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S u m m a r y

We consider the proximity effects in hybrid superconductor (S) — ferromagnet (F) structures drawing attention to the induced ferromagnetism of an S metal. The analysis is based on a quasiclassical theory of the proximity effect for metals under dirty limit conditions. It is shown that, below the superconducting critical temperature, ferromagnetic correlations extend a distance of order of the superconducting coherence length ξ_S into a superconductor, being dependent on the S/F interface parameters. We argue that the properties of mesoscopic SF hybrids may drastically depend upon the magnetic proximity effect, and recent experiments lend support to the model of SF structures where the superconducting and magnetic parameters are tightly coupled.