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Effect of impurities on field induced superconductivity in SN bilayer

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"We study the proximity effect in a superconductor (S)-normal metal (N) bilayer under in-plane magnetic field.

A compensation between the Zeeman effect and the energy splitting between bonding and anti-bonding levels leads to a magnetic field induced superconducting phase in the (H,T) phase diagram of the S-N bilayer well above the standard paramagnetic limit.

We demonstrate that the presence of the non-magnetic impurities shrink the region of field induced superconductivity existence in S-N and S-S bilayers."