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Tunneling Measurements of the Exchange Field in Superconducting Al-EuS Bilayers[1] PHILIP ADAMS, YIMIN XIONG, SHANE STADLER, Louisiana State U., GIANLUIGI CATELANI, Yale University — We present tunneling density of states measurements of the proximity-induced exchange field in superconducting Al-EuS bilayers. By depositing thin Al films onto an insulating EuS layer we demonstrate that one can induce an exchange field of several tesla in the superconducting Al. Contrary to expectations, this exchange field is a strong function of the applied field below 2 T. This applied-field dependence is not associated with the alignment of domains in the EuS, but instead appears to be an intrinsic effect. In addition, we show that the exchange field decreases significantly with increasing temperature below 1 K.

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