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Exchange field induced large magnetoresistance in the correlated insulator phase of ultrathin Beryllium films[1] TIJIANG LIU, YIMING XIONG, SHANE STADLER, JOSEPH PRESTIGIACOMO, PHILIP ADAMS, Louisiana State University, LOUISIANA STATE UNIVERSITY COLLABORATION — We present a detailed study of low-temperature magnetotransport properties of ultrathin, amorphous Be films in the EuS/Be bilayers. Significant magnetoresistance (MR) of pure insulating Be films can only be observed in fairly high magnetic field ($>$ $\sim$5 tesla), but by depositing insulating ferromagnetic EuS on top of Be film, one can obtain the same value of MR at low magnetic field ($\sim$ 0.2 tesla). We argue that this shift of MR from high field to low field may be caused by the exchange field in the Be component of Be/EuS bilayers.

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