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Tunneling Anisotropic Magnetoresistance in Co/AIO_x/Au Tunnel Junctions¹ RUIHENG LIU, Halmstad University and Lund University, Sweden, LUKASZ MICHALAK, CARLO CANALI, Kalmar University, Sweden, LARS SAMUELSON, Lund University, Sweden, HAKAN PETTERSSON, Halmstad University, Sweden — We observe spin-valve-like effects in nano-scaled thermally evaporated Co/AIO_x/Au tunnel junctions. The tunneling magnetoresistance is anisotropic and depends on the relative orientation of the magnetization direction of the Co electrode with respect to the current direction. We attribute this effect to a two-step magnetization reversal and an anisotropic density of states resulting from spin-orbit interaction. The results of this study points to future applications of novel spintronics devices involving only one ferromagnetic layer.

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