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Berry-phase blockade in single-molecule magnets GABRIEL GONZALEZ, MICHAEL LEUENBERGER, NanoScience Technology Center — We formulate the problem of electron transport through a single- molecule magnet (SMM) in the Coulomb blockade regime taking into account topological interference effects for the tunneling of the large spin of a SMM. The interference originates from spin Berry phases associated with different tunneling paths. We show that in the case of incoherent spin states it is essential to place the SMM between oppositely spin-polarized source and drain leads in order to detect the spin tunneling in the stationary current, which exhibits topological zeros as a function of the transverse magnetic field.

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