

Abstract Submitted  
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**Theory of Tunneling Anisotropic Magnetoresistance Using the Tight-Binding Green's Function Approach** VIVEK AMIN, Department of Physics and Astronomy, Texas A&M University, JAN ZEMEN, The University of Nottingham, JAN MASEK, Institute of Physics, Academy of Sciences of the Czech Republic, JAIRO SINOVA, Department of Physics and Astronomy, Texas A&M University, TOMAS JUNGWIRTH, Institute of Physics, Academy of Sciences of the Czech Republic — An increasing experimental and theoretical understanding of magnetic tunnel junctions has led to widespread application within magnetic hard drives and furthered our understanding of spin valve-like processes fundamental to Spintronics. Crucial to this understanding is the investigation of tunneling processes between single ferromagnetic layers and tunnel barriers. We present a theoretical study of the Tunneling Anisotropic Magnetoresistance (TAMR) in a Co/Pt junction with a tunnel barrier. We calculate conductance as a function of magnetization direction using the Landauer-Buttiker formula. The system Hamiltonian is obtained by means of a suitable tight-binding model fitted to ab-initio calculations, while the transmission is computed via the Green's function formalism.

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