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Theory of Antiferromagnetic Metal Spintronics REMBERT DUINE, The University of Texas at Austin, ALVARO NUNEZ, PAUL HANEY, ALLAN MACDONALD, The University of Texas at Austin — Spintronics in ferromagnetic metals is built on a complementary set of phenomena in which magnetic configurations influence transport coefficients and transport currents alter magnetic configurations. In this talk I will argue that nanostructure circuits containing antiferromagnetic elements have large potential for applications, partly because the critical current for inducing magnetization dynamics may be smaller than for ferromagnets. This occurs in part because spin torques that lead to current-induced switching act through the entire volume of an antiferromagnet. I will explain how this follows from the special symmetry properties of antiferromagnets.

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