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Dynamics of lateral magnetoelectronic thin-film nanostructures

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Hybrid nanostructures made from ferromagnetic and normal metals come in two main flavors: perpendicular multilayer nanopillars and lateral thin film devices. Current-induced magnetization dynamics have until now mainly been studied in perpendicular structures. However, lateral devices have several advantages compared to perpendicular ones, such as relative ease to study multi-terminal configurations and to directly observe the magnetic order parameter. In this talk I will discuss the magnetization dynamics of lateral thin-film structures in the framework of magnetoelectronic circuit theory. The research has been done in collaboration with Xuhui Wang, Yaroslav Tserkovnyak, Arne Brataas, Bart van Wees, Axel Hoffmann, and Teruo Ono.