

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Colored thermal noise in spin valves JIANG XIAO, GERRIT BAUER, Kavli Institute of NanoScience, Delft University of Technology, Delft, The Netherlands, SADAMICHI MAEKAWA, Institute for Materials Research, Tohoku University, Sendai, Japan, ARNE BRATAAS, Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway — We report a theoretical study of the thermal electrical noise in spin valves. There are two independent noise sources in spin valves: 1) thermal agitation of charge carriers causing Johnson-Nyquist noise, 2) thermal agitation of the magnetization that contributes to the electric noise by spin and charge pumping. The noise power spectrum from the latter consists of two absorption lines at zero frequency and at the ferromagnetic resonance on top of a white noise background. The relative intensities depend on the magnetization configuration.

Jiang Xiao
Kavli Institute of NanoScience, Delft University of Technology,
Delft, The Netherlands

Date submitted: 13 Nov 2008

Electronic form version 1.4