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Magnetic Spin Relaxation Probed with Sweep Speed Dependent Coercivity[1] THOMAS GREDIG, MATTHEW BYRNE, Department of Physics and Astronomy, California State University Long Beach — The magnetic spin relaxation of finite-length iron chains has been investigated in iron phthalocyanine thin films by means of sweep speed dependence on magnetic coercivity. The Fe(II) ions are embedded in a carbon matrix and molecules self-assemble during vacuum sublimation, so that the Fe(II) cores form well-separated chains of 1.3 nm and tunable chain lengths within the polycrystalline thin film. The average length of the chains is controlled through deposition variables and ranges from 30 nm to 300 nm. The coercivity strongly increases with chain length in this regime. This may be an interesting experimental realization of a low-dimensional finite-sized Ising model. The coercivity dependence on chain length and sweep speed is described with an Ising model based on Glauber dynamics.

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