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**Dynamics of the Random-Field Ising Model** SPENCER TOMARKEN, DANIEL SILEVITCH, THOMAS ROSENBAUM, Department of Physics, The University of Chicago — Ising magnets with long, needle-like domains can be treated as single extended spins which interact via dipole–dipole forces. Typically such dipole interactions cancel out due to spatial symmetry, but the combination of randomly packed grains and the application of a magnetic field transverse to the easy axis of magnetization can break the symmetry. This results in a site-random-magnetic field that points along the easy axis and varies from grain to grain, described by the Random–Field Ising Model (RFIM). We report a series of magnetization measurements in longitudinal and transverse magnetic fields that demonstrate RFIM behavior in the room–temperature, rare–earth ferromagnet $Nd_2Fe_{14}B$, and analyze our data in terms of predicted scaling relations.

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