Demagnetization Effects in Dipolar Systems PATRIK HENELIUS, MIKAEL TWENGSTRÖM[1], Department of Theoretical Physics, The Royal Institute of Technology, Sweden, LAURA BOVO[2], London Centre for Nanotechnology and Department of Physics and Astronomy, University College London, UK, MICHEL J.P. GINGRAS, Department of Physics and Astronomy, University of Waterloo, Canada & Canadian Institute for Advanced Research, Canada, STEVEN T. BRAMWELL, London Centre for Nanotechnology and Department of Physics and Astronomy, University College London, UK — The internal magnetic field of a uniformly magnetized body depends in general on the shape of the object. The calculation of this field, and the associated demagnetization factors, is a classical subject in the study of magnetism. Here we revisit the relationship between the demagnetization factor obtained through fluxmetric, magnetometic and bulk susceptibility techniques. Apart from simple uniaxial systems we also consider more complicated systems, such as the dipolar spin ice model on a pyrochlore lattice, where we compare our results to experimental bulk susceptibility measurements performed on a variety of sample shapes.

[1]Theoretical modeling
[2]Measurements

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