Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Magnetic Behavior of the larger network of triangles in Dy_8 molecule[1] QING ZHANG, City College of New York, CUNY, MICHAEL L. BAKER, Stanford University, SHIQI LI, MYRIAM P. SARACHIK, City College of New York, CUNY, THEOCHARIS STAMATATOS, Brock University, Ontario — Qubits with chiral symmetry promise to allow denser packing because the magnetic field produced by toroidal moments decays much faster than that of normal magnetic dipoles. Prompted by the chiral symmetry found for Dy_3 [1], we have embarked on a study of the toroidal magnetism in a larger network of triangles in a Dy_8 molecule with the formula $(Et_4N)_4[Dy_8O(nd)_8(NO_3)_{10}(H_2O)_2]2MeCN$ [2]. The effect of exchange coupling within a triangular network of eight oxo-bridged Dy(III) ions is investigated. Single crystal magnetization follows the 4-fold structural symmetry of the Dy_8 molecule. The angular dependence of single crystal magnetization data is consistent with an Ising type exchange Hamiltonian, the single ion easy axes are determined by an electrostatic crystal field model. [1] J. Luzon, et al., Phys. Rev. Lett. 100, 247201 (2008). [2] D. I. Alexandropoulos, et al., Inorg. Chem. 53, 5420 (2014).

[1]Work supported by ARO W911NF-13-1-1025 (CCNY), the synthesis of the Dy_8 cluster was supported by NSERC (Discovery grant to Th.C.S.).

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Date submitted: 29 Nov 2016 Electronic form version 1.4