Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

The effect of sample aspect ratio on Curie temperature of Mn_{12}-ac[1] SHIQI LI, City College of New York, PRADEEP SUBEDI, New York University, Y. YESHURUN, Bar-Ilan University, Israel, M.P. SARACHIK, City College of New York, A.D. KENT, New York University, C. LAMPROPOULOS, G. CHRISTOU, University of Florida - Gainesville — The inverse magnetic susceptibility measured in a SQUID-based Quantum Design MPMS magnetometer was investigated for different samples of Mn_{12}-ac as a function of the aspect ratio (c/a) of the crystal, where c is the length and a is the width of the sample. The Curie temperature T_c inferred from the positive intercepts of the Curie-Weiss law increases from 0.3 K for a sample of aspect ratio around 1, and approaches saturation to a value ~ 0.75 K for crystals with aspect ratio above 5. Our results can be explained by taking into account the effect of demagnetization field.

[1]Supported by NSF-DMR-0506946, ARO W911NF-08-1-0364, NSF-DMR-0451605, CHE-0910472 and Deutsche Forschungsgemeinschaft.

Bo WEN
Dept. of Physics, City College of New York, CUNY

Date submitted: 20 Nov 2009 Electronic form version 1.4