

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Antiferromagnetic exchange coupling measurements on single Co clusters W. WERNSDORFER, CNRS, Institut Neel, Grenoble, D. LEROY, C. PORTEMONT, A. BRENAC, R. MOREL, L. NOTIN, CEA, INAC, Grenoble, D. MAILLY, LPN, CNRS, Marcoussis — We report on single-cluster measurements of the angular dependence of the low-temperature ferromagnetic core magnetization switching field in exchange-coupled Co/CoO core-shell clusters (4 nm) using a micro-bridge DC superconducting quantum interference device (μ -SQUID). It is observed that the coupling with the antiferromagnetic shell induces modification in the switching field for clusters with intrinsic uniaxial anisotropy depending on the direction of the magnetic field applied during the cooling. Using a modified Stoner-Wohlfarth model, it is shown that the core interacts with two weakly coupled and asymmetrical antiferromagnetic sublattices. Ref.: C. Portemont, R. Morel, W. Wernsdorfer, D. Mailly, A. Brenac, and L. Notin, Phys. Rev. B 78, 144415 (2008)

Wolfgang Wernsdorfer
CNRS, Institut Neel

Date submitted: 20 Nov 2008

Electronic form version 1.4