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Local Spin Anisotropy Effects upon the Magnetization of Single Molecule Dimers[1] RICHARD KLEMM, Kansas State University, DMITRI EFREMOV, Technische Universitaet Dresden — We present an exactly solvable model of equal spin s_1 single molecule magnetic dimers. The spins within each dimer interact via the Heisenberg and the most general quadratic global and local anisotropic spin exchange interactions, and with the magnetic induction $\mathbf{B}$. For antiferromagnetic couplings and $s_1 > 1/2$, the low temperature magnetization $\mathbf{M}(\mathbf{B})$ exhibits a rich variety of steps of unequal width, the structure and anisotropy of which depend upon the various local anisotropic spin exchange energies. Specific numerical results for Fe2 $s_1 = 5/2$ dimers will be presented.

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