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The Magnetic Super-Exchange Coupling in Copper(II) Acetate Monohydrate and a Redetermination of the Crystal Structure

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Keywords
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Abstract: The magnetic properties and redetermination of crystal structure of copper(II) acetate monohydrate have been studied. The copper(II) centers are separated by 2.617(1) \AA \ and antiferromagnetically coupled (-2J = 292.2 cm^{-1}), which follows from temperature-dependent magnetic susceptibility measurements in the temperature range 4.2 to 300 K. The magnetic moment at 300 K is about 2.1 Bohr magnetons while 0.1 Bohr magnetons at 4.2 K. The magnetic susceptibility is at a maximum near 250 K and decreases rapidly as the temperature is lowered to liquid helium temperature.

Key Words: Magnetic Super - Exchange; Antiferromagnetic Coupling; Crystal Structure.

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