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Low Temperature Magnetic Behavior of Manganese Carboxylates
MARSHALL BREMER, SHENGMING LIU, BRIDGER ANDERSON, JOSEPH SANDSTROM, DOUG SCHULZ, ANTHONY CARUSO, Center for Nanoscale Science and Engineering, North Dakota State University — Antiferromagnetic ordering has proved to be very useful in producing high temperature remnant moments in organic-based compounds. A manganese carboxylate-based complex demonstrating strong antiferromagnetic coordination has been discovered and shown to exhibit exotic magnetic behavior at low temperatures. The complex is comprised of two-dimensional sheets containing 12 member, edge sharing hexagons featuring carboxylate bridged manganese. These honeycomb sheets provide the structure which supports several magnetic phase transitions. ac and dc magnetometry data support spin glass, metamagnetic and ferrimagnetic behavior at low temperatures. The interaction parameter J is estimated by comparing mean field theory models to the high temperature susceptibility data. The magnetic states and supporting evidence will be discussed.

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