

Abstract Submitted  
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**Magnetic dilution in the cadmium-doped spin ladder compound**

$Cd_xCu_{1-x}(\textit{quinoxaline})Br_2$  BRIAN KEITH, CHRIS LANDEE, MARK TURNBULL, Clark University — Both  $Cu(\textit{quinoxaline})(Br_2)$  and  $Cu(\textit{quinoxaline})(Cl_2)$  are examples of molecule-based magnets where the  $CuX_4$  dimers are linked into ladders by quinoxaline molecules, where X is either Cl or Br. The rung exchange occurs through the bridging halides while the rail exchange occurs through the quinoxaline rings. Introducing random rung interactions into the system  $[Cu(\textit{quinoxaline})(Br_2)_{1-x}(Cl_2)_x]$  has caused the spin gap to close, in contrast with the gapped pure spin ladder parents. Crystal growth of non-magnetic-doped molecular magnets,  $Cd_xCu_{1-x}(2,3\textit{-dimethylpyrazine})Br_2$ , have been performed for several values of the nominal concentration, x, and have been confirmed. The magnetizations and susceptibilities of the magnetically diluted ladder assemblage are presented along with a comparison of the effects of dilution from the pure case (x=0).

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