

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Random Exchange Antiferromagnetic Heisenberg Chains¹

CHRISTOPHER LANDEE, FAN XIAO, BRIAN WELLS, BRIAN KOOPMAN, MARK TURNBULL, Department of Physics and Carlson School of Chemistry, Clark University, MATTHIAS THEDE, ANDREY ZHELUDEV, Laboratorium für Festkörperphysik, ETH, Zürich, Switzerland — Copper *bis*pyridine dichloride (CPC) and copper *bis*pyridine dibromide (CPB) are isostructural Heisenberg $S = 1/2$ linear chains in which the copper atoms are bridged by two halides with the pyridine molecules in the axial sites. The exchange strengths are 27 K (CPC) and 45 K (CPB). We have prepared mixed halide versions $\text{Cu}(\text{py})_2[\text{Cl}_{1-x}\text{Br}_x]_2$ for values of x from 0 to 1. We will report on the effect of the exchange randomness on the susceptibilities and Néel temperatures of this family of compounds, as determined by dc-magnetometry, muon spin relaxation, and low-temperature calorimetry.

¹Partially supported by the Swiss National Science Foundation, under Project 6 of MANEP.

Christopher Landee
Dept of Physics and Carlson School of Chemistry, Clark University

Date submitted: 07 Dec 2010

Electronic form version 1.4