

Abstract Submitted  
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**Memory interference in stage-2 CoCl<sub>2</sub> graphite intercalation**

MASATSUGU SUZUKI, ITSUKO SUZUKI, SUNY-Binghamton, MOTOHIRO MATSUURA, Fukui University of Technology, Japan — Memory interference effects of aging behavior in stage-2 CoCl<sub>2</sub> GIC ( $T_{cu} = 8.9$  K and  $T_{cl} = 6.9$  K)<sup>1,2</sup> have been studied by low frequency ( $f = 0.1$  Hz) AC magnetic susceptibility and genuine thermoremanent magnetization experiments. When the system is aged at multiple stop temperatures ( $T_s$ ) for wait times (typically  $t_w = 3.0 \times 10^4$  sec) during a zero-field cooling (ZFC) protocol, the AC magnetic susceptibility exhibits multiple aging holes (dips) at the stop temperatures ( $T_s < T_{cu}$ ) on reheating. The depth of the aging hole at  $T_s = 6.0$  K is logarithmically proportional to the wait time. The depth of the aging hole (for the same  $t_w$ ) exhibits a local maximum at 6.5 K just below  $T_{cl}$ . It drastically decreases with increasing temperature and reduces to zero above  $T_{cu}$ . The genuine thermoremanent magnetization (TRM) measurement also indicates that the memory of the specific spin configurations imprinted at multiple stop temperatures between  $T_{cl}$  and  $T_{cu}$  for a wait time during the field-cooled (FC) protocol can be retrieved on reheating.

1. M. Suzuki, I.S. Suzuki, and M. Matsuura, Phys. Rev. B **73**, 184414 (2006).
2. M. Suzuki, I.S. Suzuki, and M. Matsuura, J. Phys. Condensed Matter in press, Proceeding of HFM 2006, Osaka, Japan (August, 2006).

Masatsugu Suzuki  
SUNY-Binghamton

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