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**Memory and aging effect in hierarchical spin orderings of stage-2 CoCl<sub>2</sub> graphite intercalation compound** MASATSUGU SUZUKI, ITSUKO SUZUKI, SUNY-Binghamton, MOTOHIRO MATSUURA, Fukui University of Technology — Stage-2 CoCl<sub>2</sub> graphite intercalation compound undergoes two magnetic phase transitions at  $T_{cl}$  (= 7.0 K) and  $T_{cu}$  (= 8.9 K). The aging dynamics of this compound is studied near  $T_{cl}$  and  $T_{cu}$ . The intermediate state between  $T_{cl}$  and  $T_{cu}$  is characterized by a spin glass phase extending over ferromagnetic islands. A genuine thermoremanent magnetization (TRM) measurement indicates that the memory of the specific spin configurations imprinted at temperatures between  $T_{cl}$  and  $T_{cu}$  during the field-cooled (FC) aging protocol can be recalled when the system is re-heated at a constant heating rate. The zero-field cooled (ZFC) and TRM magnetization is examined in a series of heating and reheating process. The magnetization shows both characteristic memory and rejuvenation effects. The time ( $t$ ) dependence of the relaxation rate  $S_{ZFC}(t) = (1/H)dM_{ZFC}(t)/d\ln t$  after the ZFC aging protocol with a wait time  $t_w$ , exhibits two peaks at characteristic times  $t_{cr1}$  and  $t_{cr2}$  between  $T_{cl}$  and  $T_{cu}$ . An aging process is revealed as the strong  $t_w$  dependence of  $t_{cr2}$ . The observed aging and memory effect is discussed in terms of the droplet model.

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