

Abstract Submitted  
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**Waiting time effects in CuMn thin films**<sup>1</sup> DANIEL TENNANT, The University of Texas at Austin, GREGORY KENNING, Indiana University of Pennsylvania — We report dynamical measurements of  $\text{Cu}_{86.5}\text{Mn}_{13.5}$  4.5nm thin films separated within a multilayer structure by 60nm layers of Cu. Systematic measurements of the waiting time effect on the thermoremanent magnetization (TRM) decays are made between 16K and the onset of irreversibility at  $T_f = 24\text{K}$ , which occurs at  $0.45 T_g$ , the bulk transition temperature. At temperatures well below the freezing temperature up till approximately 21K, waiting time effects are observed with the effect going to zero at approximately 21K. Between 21K and 24K, we find, that while the waiting time effect is suppressed, the film remains in the spin glass phase as observed by the remnant magnetization. These observations are examined in light of the growth of the spin glass correlation length,  $\xi(t, T)$ , from nucleation to length scales comparable to the thin film thickness  $\mathcal{L}$ . The vanishing of the waiting time effect for times and temperatures such that  $\xi(t, T) \geq \mathcal{L}$  is confirmatory evidence that  $\xi(t, T)$  has reached the film thickness.

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