

Abstract Submitted  
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**Aging and Slow Dynamics in the Relaxor Ferroelectrics SBN and SBN:La**<sup>1</sup> LAMBERT K. CHAO, EUGENE V. COLLA, M. B. WEISSMAN, Dept. of Physics, University of Illinois at Urbana-Champaign, DWIGHT D. VIEHLAND, Dept. of Materials Science and Engineering, Virginia Tech — The uniaxial relaxor ferroelectrics  $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$  (SBN) and SBN doped with 1% La (SBN:La) is found to show a crossover from spinglass-like aging (exhibiting hole-like memory effects) to cumulative aging upon cooling into the relaxor regime. This is in contrast to the hole-like aging seen in the cubic perovskite relaxors.<sup>2</sup> It lends support to our proposed picture of the glassy behavior in the cubic relaxors as arising from the freezing of canted moments (not present in uniaxial SBN) around the local polarization, similar to the x-y spins in a reentrant spinglass. We will discuss aging behavior of SBN and in particular the behavior of the dielectric polarization under DC-bias in this “cumulative-aging regime”. Barkhausen noise experiments underway, in comparison with previous experiments on the cubic relaxors, may also shed more light on the dynamic cooperativity in this regime.

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<sup>2</sup>E.V. Colla *et al.*, Phys. Rev. B **88** 134107 (2001).

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