

Abstract Submitted  
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**Correlation of intrinsic localized mode properties with sample temperature**<sup>1</sup> J.P. WRUBEL, M. SATO, A.J. SIEVERS, LASSP, Cornell University — Intrinsic localized modes (ILMs) in a quasi-1D antiferromagnetic lattice may be eternalized with a moderate powered microwave driver at a locking frequency below the AFMR. These locked ILMs are dynamical sources of nonlinearity in the sample and can therefore be detected in emission by four wave mixing [1]. The emission signal decays in steps at reproducible times as individual ILMs are unlocked from a driver. We have discovered that an unlocked ILM may be recaptured by increasing the amplitude of the driver. To examine the role of the sample temperature on this locking phenomenon the frequency of the driver has been amplitude modulated from 100 Hz to 50 kHz. Our experimental results show that the ILMs are not able to lock to the driver if the sample temperature is unable to follow the modulation frequency. 1. M. Sato and A. J. Sievers, Nature **431**, Nov. 25 (2004).

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