

Abstract Submitted  
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**High Magnetic Field Susceptibility Measurements for BaCuSi<sub>2</sub>O<sub>6</sub>**

K. M. PURCELL, C. MARTIN, T. P. MURPHY, E. C. PALM, S. W. TOZER, NHMFL-FSU, S. E. SEBASTIAN, I. R. FISHER, Stanford University — We have measured the change in magnetic susceptibility of the spin gap system BaCuSi<sub>2</sub>O<sub>6</sub> at high magnetic fields (33T) utilizing the change in the resonant frequency of a tunnel diode oscillator (TDO). At temperatures below T~3K, measurements reveal the presence of a critical field H<sub>c1</sub>, characterized by a jump in magnetic susceptibility. The evolution of H<sub>c1</sub> with temperature is in good agreement with the previous magnetization and specific heat measurements and with the theoretical predictions for the realization of Bose-Einstein condensate by the spin system of Cu<sup>2+</sup> dimers. This technique provides the opportunity for future investigation of this material at high pressures.

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