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Thermomagnetic Studies of K_2NaCrO_8[1] SARITHA NELLUTLA, National High Magnetic Field Laboratory, MEKHALA PATI, Florida State University, KWANYONG CHOI, Florida State University and NHMFL, YOUNJUNG JO, National High Magnetic Field Laboratory, NARESH DALAL, Florida State University and NHMFL, LUIS BALICAS, JOHAN VAN TOL, National High Magnetic Field Laboratory, DANIEL PAJEROWSKI, BYOUNG HEE MOON, YOONSEOK LEE, MARK MEISEL, YASUMASA TAKANO, University of Florida — There has been renewed interest in the search for new model quantum spin systems that can exhibit BEC of magnons. K_2NaCrO_8 is one of the simplest spin systems available since $S = 1/2$ and $I = 0$. Specific heat (C_p) measurements indicate that this material orders antiferromagnetically at $T_N \sim 1.7$ K in zero-field [1]. Application of an external magnetic field pushes the C_p maximum to lower temperatures. Torque and AC susceptibility measurements show that the transition temperature is rapidly suppressed around 7.4 T, with no hysteretic behavior, implying the presence of a quantum phase transition. Measurements are underway to map the phase boundary in the $T \to 0$ K, B ~ 7.4 T region and extract the critical exponent (α) from the relation $k_B T_c \approx (B_c\text{-}B)^{\alpha}$. [1] B. Cage, N. S. Dalal, *Chem. Mater.* **13**, 881 (2001).

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