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Anomalous field-symmetric Nernst signal in striped cuprate $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$ ¹ N. PHUAN ONG, LU LI², Princeton University, J. M. TRANQUADA, GENDA GU, Brookhaven National Lab — Starting at the structural transition temperature $T_{d2} = 54$ K, the striped cuprate $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$ ($x = \frac{1}{8}$) displays a remarkable cascade of transitions¹ at the characteristic temperatures $T_{d2} > T_1^{**} > T_{BKT} > T_c$, before settling down to 3D superconductivity with long-range coherence at $T_c = 5$ K. The Nernst signal e_N and thermopower S have been investigated in detail in these multiple states. As in pure LaSrCuO, the Nernst coefficient $N = \lim_{B \rightarrow 0} e_N / B$ (initially negative) acquires a positive vortex contribution at 120 K that grows rapidly. However, here, N saturates in the interval T_{d2} (54 K) \rightarrow T_1^{**} (34 K). As the vortex liquid becomes increasingly stabilized below T_1^{**} , N resumes increasing at an even steeper rate. Surprisingly, below 34 K, e_N acquires a B -symmetric component that is very large and oscillatory in B . We have excluded S and quasiparticles as the source of the anomalous term. We will discuss various origins including the possibility of vortex formation mechanisms that break time-reversal invariance.

1) J. M. Tranquada *et al.*, Phys. Rev. B 78, 174529 (2008).

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²Current address: MIT

N. Phuan Ong
Princeton University

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