Abstract Submitted
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Broken rotational symmetry in the pseudogap phase of a high-Tc superconductor J. CHANG, R. DAOU, D. LEBOEUF, O. CYR-CHOINIERE, F. LALIBERTE, N. DOIRON-LEYRAUD, B.J. RAMSHAW, R. LIANG, D.A. BONN, W.N. HARDY, L. TAILLEFER, UNIVERSITE SHERBROOKE TEAM, UBC VANCOUVER COLLABORATION — The nature of the pseudogap phase is a central problem in the quest to understand high-T_c cuprate superconductors. A fundamental question is what symmetries are broken when that phase sets in below a temperature T^*. Here we report the observation of a large in-plane anisotropy of the Nernst effect in $YBa_2Cu_3O_y$ that sets in precisely at T^*, throughout the doping phase diagram [1]. We show that the CuO chains of the orthorhombic lattice are not responsible for this anisotropy, which is therefore an intrinsic property of the CuO_2 planes. We conclude that the pseudogap phase is an electronic state which strongly breaks four-fold rotational symmetry.

[1] R. Daou et al., arXiv:0909.4430

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