Abstract Submitted
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Fermi surface geometry of $YBa_2Cu_4O_8$[1] NEIL HARRISON, Los Alamos National Labs., SUCHITRA SEBASTIAN, GILBERT LONZARICH, Cambridge University UK, FEDOR BALAKIREV, Los Alamos National Labs., S. SABOK, B. DABROWSKI, Argonne National Labs. — Since the discovery of magnetic quantum oscillations in the underdoped high T_c cuprates, one lingering question concerns whether the Fermi surfaces of $YBa_2Cu_4O_8$ and $YBa_2Cu_3O_{6.5}$ are similar or different. To pursue this question we utilize magnetic fields extending to 100 tesla that are now available at the National High Magnetic Field Laboratory. We find magnetic fields of this strength are essential for determining the geometry of the Fermi surface of $YBa_2Cu_4O_8$ in angle-resolved measurements. Our findings enable us to clarify the origin of the Fermi surface pockets in $YBa_2Cu_4O_8$ and $YBa_2Cu_3O_{6.5}$.

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