Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Quantum Oscillations in a π-Striped Superconductor MIRSAEED ZELLI, CATHERINE KALLIN, McMaster University, JOHN BERLINSKY, McMaster University and Perimeter Institute for Theoretical Physics — Within Bogoliubov-de Gennes theory, a semiclassical approximation is used to calculate the Fermi surface area associated with quantum oscillations in a model of a π-striped superconductor, where the d-wave superconducting order parameter oscillates spatially with zero average value. This system has a non-zero density of particle-hole states at the Fermi energy, which form Landau-like levels in the presence of a magnetic field. The oscillation frequency found for large pairing interaction, for π-stripes with period 8, is close to that reported for experimental measurements in the cuprates. A comparison is made of this theory to data for quantum oscillations in the specific heat measured by Riggs et al.

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Date submitted: 11 Nov 2011 Electronic form version 1.4