Abstract Submitted
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A mean-field phase diagram with a pair density wave state in relation to cuprate phenomenology[1] AKASH MAHARAJ, LAIMEI NIE, Stanford University, EDUARDO FRADKIN, University of Illinois at Urbana-Champaign, STEVEN KIVELSON, Stanford University — The possible role of the pair density wave (PDW) phase in the cuprate phase diagram is discussed. We examine the mean field Landau theory which intertwines PDW order with uniform superconductivity as well as incommensurate spin- and charge-density wave order, and show how many unique experimental features of different cuprate families are qualitatively reproduced naturally from this perspective. In particular, we focus on the existence of subsidiary incommensurate charge order – both in the presence and absence of a magnetic field – and show that various observed trends can be understood from this perspective. This, in turn, is consistent with the supposition that the charge ordering phenomena observed in different cuprates have a common underlying origin.

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