

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

The impact of incommensurate bond centered density waves in underdoped cuprates LIANG NIESTEMSKI, Colgate Univeristy, ZIQIANG WANG, Boston College — We study the particle-particle channel and the particle-hole channel of the valence bond fluctuations away from half filling in cuprates. Based on strong-coupling analysis of the t-J model, we argue that the superexchange interaction J induced incommensurate bond centered density wave order is the driving mechanism for the pseudogap state. We show that the interplay between the incommensurate bond centered density wave instability and the intrinsic electronic inhomogeneity in real cuprates materials is responsible for the observed pseudogap phenomena.

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Date submitted: 11 Nov 2011

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