

Abstract Submitted
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The formation of stripes and the pairing of charge carriers in anisotropic materials¹ K.J.E. VOS, C. POVEY, J.M. TIPPER, University of Lethbridge — We have examined the formation of stripes and pairing in the anisotropic $t - J$ model. We have used exact diagonalization methods on several different cluster sizes to examine the underdoped region. Evidence of unidirectional stripe formation in the charge and spin correlations was found. We have determined that the formation of stripes parallel to the Cu-O-Cu bonds enhances pairing and in the bulk limit there is a finite range of doping concentration where hole pairs will form. As the material becomes more anisotropic there is a phase transition that destroys the stripe. These results are consistent with the experimental data.

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