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On the role of inhomogeneities for correlated d-wave superconductors. RASTKO SKNEPNEK, DOE-Ames Lab, JUN LIU, Iowa State University, JOERG SCHMALIAN, Iowa State University/DOE-Ames Lab — We investigate the impact of inhomogeneities on pairing and off diagonal long range order in a correlated superconductor. Using a variational Monte Carlo study of the t-J model we demonstrate that the local pairing strength and superconducting long range correlations are sensitive with respect to spatial variations of external charge and pairing potentials. In addition we analyze evolution the underlying Fermi surface which is changing towards a diamond shape due to strong but local spin correlations. We analyze the robustness of this effect with respect to spatial inhomogeneities.

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