

Abstract Submitted
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Quantum Phase Transitions in mixtures of two identical Bosonic Species FABIO LINGUA, MARCO GUGLIELMINO, Department of Applied Science and Technology, Politecnico di Torino, I-10129 Torino, Italy, BARBARA CAGROSSO SANSONE, H. L. Dodge Department of Physics and Astronomy, The University of Oklahoma, Norman, Oklahoma, USA, VITTORIO PENNA, Department of Applied Science and Technology, Politecnico di Torino, I-10129 Torino, Italy — We investigate the phase diagram of a two-component bosonic systems in a square lattice by means of quantum Monte Carlo simulation. Depending on the interplay between inter- and intra-species interactions we show the existence of interesting quantum phases such as, among others a demixed superfluid, a demixed Mott insulator, supercounterflow.

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