## Abstract Submitted for the DAMOP15 Meeting of The American Physical Society

Quantum Phase Transitions in mixtures of two Bosonic Species BARBARA CAPOGROSSO-SANSONE, H. L. Dodge Department of Physics and Astronomy, The University of Oklahoma, Norman, Oklahoma, USA, FABIO LINGUA, MARCO GUGLIELMINO, 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 system 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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Date submitted: 30 Jan 2015 Electronic form version 1.4