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Interspecies entanglement of two-component Bose-Hubbard model WEI WANG, Univ of Oklahoma, VITTORIO PENNA, Politecnico di Torino, BARBARA CAPOGROSSO-SANSONE, Univ of Oklahoma — We studied the two-component Bose-Hubbard model by means of perturbation theory. As previously observed numerically, in the presence of a second component, the boundaries of the Mott insulator lobe shift differently on the particle and hole side. In order to explain this observation, we studied the interspecies entanglement. In the calculation, we reduced the computation by considering the group of symmetry operations on the lattice (graph automorphisms). This group partitions the Fock basis into symmetry classes whose contribution to the ground state can be used to give a criterion of entanglement.

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