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**Dynamics of a two-species Bose-Einstein condensate in a double well** BO SUN, M. PINDZOLA, Auburn University, AUBURN UNIVERSITY TEAM — The dynamics of a two-species Bose-Einstein condensate in a double well is studied using the two-mode approximation. Such a system is characterized by the intraspecies and interspecies s-wave scattering as well as the Josephson tunneling between the two wells and the population transfer between the two species (i.e. two internal states in this study). We discuss the population dynamics for some interesting regimes where we can obtain closed-form results. To support our conclusions, we also present numerical results in each regime. A particularly interesting case is for vanishing intraspecies scattering lengths and a weak interspecies scattering length where we find collapses and revivals in the population dynamics.

Bo Sun
Auburn University

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