

Abstract Submitted
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Splitting dynamics of a two-species Bose-Einstein condensate in two translating traps BO SUN, M.S. PINDZOLA, Auburn University — We simulated the splitting dynamics of a two-species condensate in two translating traps. Different from the single species case, we find that the splitting is not 50:50 towards small translation speed for both species. We interpret this as a result of the effective potential induced by the mean field inter-species interaction. Such a picture is valid for both positive and moderate negative inter-species scattering lengths. From our numerical results, it turns out that the two-species condensate beam splitter is less controllable than the single species case. The performance of our dual species atomic beam splitter is supported by exploring realistic physical parameters.

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