

Abstract Submitted
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Development of an apparatus for simultaneous trapping of ${}^6\text{Li}$ - ${}^{87}\text{Rb}$ mixtures QUN WEI, MICHAEL BROWN-HAYES, WOO-JOONG KIM, Dartmouth College, CARLO PRESILLA, University of Rome “La Sapienza” and INFN-CNR, ROBERTO ONOFRIO, Dartmouth College and University of Padova — Ultracold dilute atomic gases are providing a new window into quantum physics, with particular regard to the first-principle study of various superfluid phenomena. It is critical, in order to open this window, to reach deeper Fermi degeneracy, and this requires, for Fermi-Bose mixtures, to optimize the heat capacity matching between the Fermi and the Bose gases. After discussing a thermodynamical model showing that heat capacity matching is improved by using species selective traps, we discuss the status of an apparatus in which we trap fermionic ${}^6\text{Li}$ and bosonic ${}^{87}\text{Rb}$ in a magneto-optical trap.

Qun Wei
Dartmouth College

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