Four techniques to achieve deeper Fermi degeneracy in Fermi-Bose mixtures

ROBERTO ONOFRIO, Department of Physics and Astronomy, University of Padova and ITAMP, Harvard-Smithsonian Center for Astrophysics — The study of exotic superfluid phases of ultracold atoms requires the achievement of deeper Fermi degeneracy with respect to the one already available. I will describe four techniques for efficient sympathetic cooling of Fermi gases with a different species Bose gas: bichromatic optical dipole [1] and light-assisted magnetic trapping [2], quasi one-dimensional Fermi-Bose mixtures [3], and fast adiabatic cooling [4].


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