Abstract Submitted
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Ultracold rubidium-87 atoms in a stabilized QUEST DWIGHT WHITAKER, AROLYN CONWILL, ERIC STUTZ, Pomona College — We have created a closed-loop servo system to stabilize the power to a CO_2 laser used to trap and cool at cloud of ^{87}Rb atoms. We will discuss the effects of power stabilization on temperature reproducibility as well as the behavior of trapped atoms in an ultra-stable trap. This system is designed to create a cloud of atoms with a temperature that is well characterized and highly reproducible. Such a trap could be useful for studying finite temperature dependence of the BEC phase transition as well as experiments on BECs at finite temperature.

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