

Abstract Submitted
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Laser cooling by adiabatic transfer¹ MATTHEW NORCIA, JULIA CLINE, JOHN BARTOLOTTA, MURRAY HOLLAND, JAMES THOMPSON, JILA, University of Colorado Boulder — We have demonstrated a new method of laser cooling applicable to particles with narrow linewidth optical transitions. This simple and robust cooling mechanism uses a frequency-swept laser to adiabatically transfer atoms between internal and motional states. The role of spontaneous emission is reduced (though is still critical) compared to Doppler cooling. This allows us to achieve greater slowing forces than would be possible with Doppler cooling, and may make this an appealing technique for cooling molecules. In this talk, I will present a demonstration of this technique in a cold strontium system.

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