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A Superradiant Laser in Strontium MATTHEW NORCIA, MATTHEW WINCHESTER, JAMES THOMPSON, JILA/ University of Colorado at Boulder — An ensemble of Alkaline Earth atoms cooled and trapped in an optical lattice has been proposed as a gain medium for a very narrow (mHz) linewidth laser. This laser would operate in a bad-cavity regime, where the linewidth of the lasing transition is much narrower than that of the cavity that surrounds it. In this regime, perturbations of the lasing frequency due to shifts in cavity frequency are highly suppressed. I will present experimental progress towards the realization of such a laser based on Strontium atoms.

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