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Recent Experiments in Ultracold Strontium[1] SARAH NAGEL, YENNY MARTINEZ, PASCAL MICKELSON, THOMAS KILLIAN, Rice University — We present recent work toward achieving quantum degeneracy in Strontium. In the first stage of cooling, a MOT operating on the strong ($\Gamma = (2\pi)^*$ 32 MHz), $^1S_0 \rightarrow {}^1P_1$ transition cools 10^8 atoms to 2 mK. Approximately 50% of these atoms are transferred to a second-stage MOT operating on the weaker ($\Gamma = (2\pi)^*$ 7.5 kHz) $^1S_0 \rightarrow {}^3P_1$ intercombination transition, further cooling the sample to 5 μK. Here we discuss transferring this sample to an optical dipole trap and using evaporative cooling techniques to reach quantum degeneracy.

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