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Spin Control on an Atom Chip[1] PAUL KUNZ, DAVID MEYER, PATRICIA LEE, QUDSIA QURAISHI, Army Research Laboratory — Spin control of cold atoms is a rich area of research that continues to reveal insights into fundamental atomic and condensed matter physics while simultaneously offering promise for many devices and applications. Microfabricated atom chips are a convenient platform for investigating cold atoms as they provide magnetic trap and waveguide potentials for the atoms. We are developing a rubidium atom chip experiment, and have successfully trapped cold atoms on our chip. We are presently optimizing the system to achieve Bose Einstein condensation. We report on the status of our atom chip experiment, and our progress towards atomic spin control and coherence measurements.

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