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Prospects for Magnetometry with Mesospheric Sodium JAMES HIGBIE, Bucknell University, DMITRY BUDKER, BRIAN PATTON, ERIC CORSINI, UC Berkeley, BERKELEY-BUCKNELL MESOSPHERIC SODIUM COLLABORATION COLLABORATION — Atomic sodium in the mesosphere has been studied for a number of years, with particular reference to its use in artificial guide stars for adaptive-optics telescopes. In this work, we present progress toward use of mesospheric sodium for measurement of geomagnetic fields, including detailed simulation results. Such measurements would complement existing satellite magnetometry missions at a small fraction of the cost. Projections of ultimate magnetometric sensitivity will be given, and work toward experimental realization will be discussed.

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