

Abstract Submitted
for the DAMOP10 Meeting of
The American Physical Society

Noise characteristics of millihertz lasers with group II atoms¹

DOMINIC MEISER, MURRAY J. HOLLAND, JILA, Department of Physics, University of Colorado — Group II atoms have the potential to allow us to build lasers with ultra narrow linewidths in the millihertz range. For applications of the light source in precision metrology and timekeeping it is essential to understand the noise properties of this device. Here we present results on the intensity correlations as well as the phase stability this light source. We show that in the regime of collective emission the light is basically in a coherent state with a linewidth that is determined by the single atom decay rate.

¹This research has been partially supported by NSF.

Dominic Meiser
JILA, Department of Physics, University of Colorado

Date submitted: 22 Jan 2010

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