

Abstract Submitted
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Decoherence Effects in a Light Storage Experiment JIN WANG,
University of Michigan — This investigation develops a model that shows the effects of decoherence originating from both dephasing and population relaxation on rubidium vapor in the EIT regime. This investigation quantifies the effect of decoherence on the large Faraday rotation, susceptibility, transmission, population and coherence relationships of the system. The model derived in this investigation is in excellent agreement with experimental results. The total decoherence rate for the experiment has been found by fitting the experimental data to the model. This investigation also includes a discussion of other types of experiments that this model could be adapted to such as Dipole Induced Transmission (DIT) and the detection of single atoms.

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