

Abstract Submitted
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Phase noise to intensity noise conversion in EIT YANHONG XIAO,
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SUSANNE YELIN, RONALD WALSWORTH, Harvard-Smithsonian — Laser phase
noise can induce intensity noise after interacting with an atomic medium. This
process plays a critical role in determining the performance of systems employing
electromagnetically induced transparency (EIT), including certain types of atomic
clocks. We present an experimental and theoretical study of EIT noise spectra and
correlations in a Rb vapor cell. Variations of noise features with laser frequency and
two-photon detunings are studied systematically with particular emphasis on noise
correlations between the two output fields.

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