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**Electromagnetically Induced Transparency in a Four-Level W Scheme: Effect of Beam Intensity and Phase on Propagation** MATTHEW LEWIS, CHRISTOPHER NELSON, Department of Physics, Millersville University, Millersville, PA — Co-propagation of two circularly polarized lasers in an electromagnetically induced transparency four-level W scheme is investigated. Our four level system is produced using the ground state and three Zeeman levels of ultracold magnesium atoms. Parameters are determined such that co-propagation of the two incident optical fields will occur. Group velocities obtained by solving the density matrix master equation for the appropriate coherences are found to be periodic with respect to the phase angle of the Rabi frequency.

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