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Lambda-type electromagnetically Induced transparency of a thermal Rb85 vapor in a magnetic field LU MA, GEORG RAITHEL, University of Michigan, GEORG RAITHEL TEAM — We measure electromagnetically induced transparency (EIT) on ground hyperfine levels of thermal Rb85 atoms in a buffer-gas-free spectroscopy cell using two 780-nm phase-locked pump and probe lasers. A small magnetic field is applied to split the magnetic sub-levels of the ground and excited states. The EIT windows are formed due to coherent superpositions of Zeeman-shifted ground-state hyperfine levels coupled to a common intermediate $5P_{3/2}$ Zeeman level. The EIT signals are observed and mapped out against a background signal affected by optical-pumping for different magnetic field strengths. The linewidth dependence on the probe and pump laser powers is also studied. The density operator and the absorption of the sample are modeled with a Monte-Carlo approach that includes all Zeeman sub-levels and optical-pumping effects. The simulation results match the measured data very well. A brief description of the electronics and the optical setup are also included in the poster.

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