

Abstract Submitted  
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**DC electric fields in electrode-free glass vapor cell by photoillumination**<sup>1</sup> LU MA, University of Michigan, ERIC PARADIS, Eastern Michigan University, GEORG RAITHEL, University of Michigan — We demonstrate tunable laser induced DC electric fields in an all-glass vapor cell without bulk or thin film electrodes. The fields are generated by a photoelectric effect, and DC field tuning up to 0.8V/cm is shown. The spatial field distribution is mapped by Rydberg electromagnetically induced transparency (EIT) spectroscopy and good spatial homogeneity is demonstrated. We explain the measured data with a boundary-value electrostatic model. This work may inspire new approaches for DC electric field control in designing miniaturized atomic vapor cell devices. Limitations and other charge effects will also be discussed.

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