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Index guiding by optically trapped ultracold atoms measured via optical pumping JON GILBERT, JACOB ROBERTS, Colorado State University
— The spatial density variation of optically trapped ultracold atoms is calculated to be sufficient to guide near-resonant red-detuned light through the gas in a manner reminiscent of a graded index fiber for experimentally achievable conditions. We present measurements of light propagating through such an optically trapped gas made via optical pumping by the light. This allows us to measure the light intensity in the gas as a function of propagation distance along the axial direction of the gas in a straightforward fashion. Comparisons between measurements and theoretical expectations based on Maxwells equations will be presented.

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