

Abstract Submitted
for the DAMOP18 Meeting of
The American Physical Society

Two-photon transitions in cold caesium atoms confined in a hollow-core optical fiber¹ TAHYUN YOON, ZHENGDAO DING, FERESHTEH RAJABI, BRIAN DUONG, CAMERON VICKERS, JEREMY FLANNERY, RUBAYET AL MARUF, MICHAL BAJCSY, IQC, Univ of Waterloo — We present the results of our experimental studies of cascade and lambda-type two-photon transitions in laser-cooled caesium atoms loaded inside a hollow-core photonic-crystal fibre. We investigate the enhancements of the two-photon processes by the tight confinement of the propagating light and from the slow-light effects arising in the optically thick atomic ensemble. We also explore the applications of these transitions for all-optical switching, cross-phase modulation, and light storage.

¹This work was supported by Industry Canada, NSERC's Discovery grant, and Ontario's Early Researcher Award

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Date submitted: 26 Jan 2018

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