Abstract Submitted
for the DAMOP19 Meeting of
The American Physical Society

Canceling light shifts in two-photon optical clocks using magic polarization SHIRA JACKSON, AMAR VUTHA, University of Toronto — Probe laser light shifts represent an important source of uncertainty in optical clocks, especially for clocks operating on highly forbidden transitions or multi-photon transitions. We find magic polarization angles for the probe laser, at which the differential polarizability of the clock states is zero, in calcium and strontium two-photon clocks. Operating the clock at a magic polarization offers a robust and simple way to suppress probe laser light shifts in two-photon clocks.

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Date submitted: 01 Feb 2019 Electronic form version 1.4