



HARVARD Quantum Optics Center

## Special Seminar

**Wednesday | Jan. 22 | 2:00 PM**  
**Lyman 425**

# Nick Hutzler

Graduate Student, Harvard University

## **"A New Limit on the Electron Electric Dipole Moment "**

The electron is expected to have an electric dipole moment ( $d_e$ ), though it has so far eluded experimental observations. While the Standard Model's prediction for  $d_e$  is still far beyond any foreseeable experiment, new physical theories (especially Supersymmetry) predict values for  $d_e$  that are near the experimental limit. The ACME Collaboration recently performed a search for  $d_e$  via a precision spin precession measurement in a beam of polar ThO molecules. Our measurement did not see any evidence for a non-zero  $d_e$ , but we did set the limit  $|d_e| < 8.7 \times 10^{-29}$  e cm. This represents an order of magnitude improvement over the previous best limit, and places tighter restrictions on new physics beyond the Standard Model.

Refreshments will be served