

# AMO SEMINAR

## EXTREME ULTRAVIOLET OPTICAL FREQUENCY COMBS AND APPLICATIONS



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The extreme ultraviolet (XUV) frequency comb is an indispensable tool for extending optical frequency metrology into the unexplored wavelength range below 200 nm. With XUV frequency combs, precision spectroscopy for fundamental physics, optical clocks and laser cooling can be extended into the XUV regime for the first time. In this talk, I will present the laser system for optical frequency comb generation at extreme ultraviolet (XUV) wavelengths below 200 nm, which is designed for precision spectroscopy of the 1S-2S two-photon transition in He<sup>+</sup>. The spectroscopy is expected to serve as a precise test of fundamental theories such as bound-state quantum electrodynamics (QED). Our recent efforts to realize XUV frequency metrology using a miniaturized compact setup based on XUV waveguides on microchip will also be discussed.



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**WEDNESDAY MAY 7TH | READING ROOM | STARTING AT 11AM**