Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Isotope effect in the high harmonics of water[1] JOE FARRELL, SLAC PULSE Institute, SIMON PETRETTI, HU Berlin, BRIAN MCFARLAND, LIMOR SPECTOR, PHIL BUCKSBAUM, SLAC PULSE Institute, ALEJANDRO SAENZ, HU Berlin, MARKUS GUEHR, SLAC PULSE Institute — We present evidence that bending motion launched by strong field ionization of the inner valence $3a_1$ orbital of H_2O strongly affects the high harmonic spectrum. The measured high harmonics of H_2O and D_2O are modeled consistently with solutions of the time-dependent Schrödinger equation for several different laser intensities. This result introduces a new method to characterize weights of different ionic states prepared by strong field ionization.

[1]We thank the Department of Energy, Offce of Basic Energy Science, AMOS program for support through the Stanford PULSE Institute.

Joe Farrell
SLAC PULSE Institute

Date submitted: 08 Feb 2011 Electronic form version 1.4