

Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

Circularly Polarized MHOHG with Bichromatic Circularly Polarized Laser Pulses ANDRE D BANDRAUK, Universite de Sherbrooke, FRANCOIS MAUGER, LSU, TURGAY UZER, Gatech — Circularly polarized MHOHG-Molecular High Order Harmonic Generation is shown to occur efficiently with intense ultrashort bichromatic circularly polarized pulses due to frequent electron-parent ion recollision with co-or counter-rotating incident circular pulses as predicted in 1995[1]. We show in this context that molecules offer a very robust and efficient framework for the production of circularly polarized harmonics for the generation of single circularly polarized “attosecond” pulses.[2]. The efficiency of such new MHOHG is shown to depend on the compatibility of the symmetry of the molecular medium with the net electric field generated by the combination of the laser pulses. Using a time-dependent symmetry analysis with concrete examples such as H₂⁺ vs H₃⁺ we show how all the features (harmonic order and $\hat{\rho}$ polarization) of MHOHG can be explained and predicted. [1] T Zuo, AD Bandrauk, J Nonl Opt Phys Mat 4, 533-546 (1995); AD Bandrauk, HZ Lu, Phys Rev A 68, 043408 (2003) [2] KJ Yuan, AD Bandrauk, Phys Rev Lett 110, 023003 (2013)

Andre D Bandrauk
Universite de Sherbrooke

Date submitted: 09 Jan 2016

Electronic form version 1.4