Abstract Submitted
for the DAMOP08 Meeting of
The American Physical Society

Scaling of high harmonic generation efficiency with wavelength CARLOS TRALLERO-HERRERO, ANDREW SHINER, NATHANIEL KAJUMBA, National Research Council Canada, HEIDI CHRISTINE BANDULET, DANIEL COMTOIS, FRANCOIS LÉGARÉ, JEAN-CLAUDE KIEFFER, INRS-Energie, Materiaux et Telecommunications, PAUL CORKUM, National Research Council Canada, DAVID VILLENEUVE[1] — We present experimental measurements of the efficiency of high harmonic generation in noble gases as function of wavelength in the range of 800nm to 2000nm. The efficiency is calculated as the integral of the XUV yield from 16eV to 45eV. We report measurements at different ionization regimes. These different stages of ionization are measured at the same time as the harmonics by means of an ion detector. The dependence of the harmonic yield is also measured for different phase matching conditions by changing the focusing geometry in the gas. We find that the harmonic generation scales like $\propto \lambda^{-\alpha}$ with $\alpha \approx 4$ to 5 depending on the ionization regime and phase matching condition.

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Date submitted: 31 Jan 2008 Electronic form version 1.4