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Spatial Dependence of High Harmonic Generation in Hydrogen Atom[1] SETH ROSS, G.P. ZHANG, Department of Physics, Indiana State University, Terre Haute, IN 47809 — We used the hydrogen atom as a model and computed the continuum mavefunction and the transition matrix elements. The total quantum number used is 200 and the number of plane waves is 100. We have done dynamical simulations to mimic the laser and electron interaction. Fianlly we compute the power spectrum by Fourier transformation of the dipole matrix. This gives us the opportunity to see the spatial dependence of high harmonic generations in the hydrogen atom. References: H. Niikura *et al*, Nature **417**, 917 (2002); **421**, 826 (2003); G. P. Zhang, Phys. Rev. Lett. **95**, 047401 (2005); G. P. Zhang and T. F. George, Phys. Rev. A **74**, 023811 (2006)

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