Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Effective Range Approach for High Harmonic Generation by Negative Ions[1] M.V. FROLOV, A.V. FLEGEL, N.L. MANAKOV, Voronezh State University, Russia, ANTHONY F. STARACE, University of Nebraska-Lincoln — We extend a recently-developed model-independent quantum approach for describing laser detachment of an electron with a non-zero angular momentum [1] to the case of high harmonic generation (HGG) by a negative ion. Our results are mainly focused on the dependence of high harmonic yield on the spatial symmetry of the bound state of a weakly-bound electron. Our numerical results for H^- and F^- ions (with s and p outer electrons, respectively) and linear laser polarization show that the HHG spectrum for s and p-states are significantly different, whereas the plateau cutoff position is insensitive to the bound state symmetry. For F^-, harmonic generation rates for the different magnetic sublevels of the active p-electron differ by about 3-5 orders of magnitude. We also discuss the accuracy of Keldysh-like approximations for the HHG amplitude. [1] M.V. Frolov et al., Phys. Rev. Lett. **91**, 053003 (2003).

[1]Supported in part by NSF Grant PHY- 0300665 and RFBR Grant 04-02-16350.

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Date submitted: 03 Feb 2005 Electronic form version 1.4