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Harmonic Generation at Nonadiabatic Crossings of Electronic States ANDRE D. BANDRAUK[1], SAMIRA BARMAKI, Universite de Sherbrooke, ATTOSECOND SCIENCE TEAM — Nonadiabatic crossings of molecular electronic states create coherent superpositions of electronic wave functions.The time evolution of such coherent electronic states on "attosecond" time scale depends on the energy separation of these states as a function of internuclear distance [1]. High order harmonic generation, HHG, induced by ultrashort intense laser pulses can be used to monitor such attosecond evolution in dissociating systems such as H3++ to H+ and H2+ [2]. We examine by detailed solutions of the time-dependent Schroedinger equation, TDSE, the HHG spectrum for the dissociating linear H3++ system subjected to an intense few cycle laser pulse at different wave lengths and internuclear distances where an adiabatic avoided crossing occurs between selected electronic states. Criteria for possibly extracting electron-nuclear nonadiabatic couplings from HHG will be presented.
[1] G L Yudin, A D Bandrauk, P B Corkum, Phys Rev Lett 96,063002(2006);
[2] A D Bandrauk, S Barmaki, G Lagmago Kamta, Phys Rev Lett 98,013001(2007).

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