

Abstract Submitted  
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**Floquet calculation of high harmonic generation from hydrogen molecular ions in monochromatic strong laser fields**<sup>1</sup> TSOGBAYAR TSEDNEE, MARKO HORBATSCH, York University — We extended previous Floquet calculations [1] to obtain high harmonic generation (HHG) for the lowest two electronic states of the  $\text{H}_2^+$  ion by strong continuous-wave laser fields. We solve the non-hermitean matrix problem to get accurate solutions to the time-dependent Schrödinger equation (TDSE) by applying a pseudospectral representation combined with a complex absorbing potential method. This represents an alternative approach to direct TDSE solutions to obtain the harmonic generation spectra for the ion. We compare our results for the HHG rate for the lower and upper states for the  $\text{H}_2^+$  ion, which correspond to gerade and ungerade states in the field-free case, with previously obtained results in the literature. We show that the enhancement of the ionization rates at critical internuclear separations  $R_c$  cause an enhancement of the HHG rates for the lower and upper states.

[1] Ts. Tsogbayar and M. Horbatsch, J. Phys. B **46**, 46, 245005 (2013)

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