

## NON-ADIABATIC ENERGIES OF THE HYDROGEN MOLECULE

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A novel perturbation theory has been developed to account for nonadiabatic effects in diatomic molecules<sup>a</sup>. All molecular levels can be obtained simultaneously from a single nuclear equation corrected for the presence of  $(m/M)^2$  terms. Comparison with the direct nonadiabatic calculations for rotationless states of H<sub>2</sub> demonstrates an agreement at the level of  $10^{-5}$  cm<sup>-1</sup> for the ground tone transition.

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<sup>a</sup>K. Pachucki and J. Komasa, *J. Chem. Phys.* **130**, 164113 (2009)