

Abstract Submitted
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Positron Annihilation on Molecules: Effects Beyond the Gribakin-Lee Model¹ A.C.L. JONES, J.R. DANIELSON, M.R. NATISIN, C.M. SURKO, University of California, San Diego — Annihilation at positron energies in the range of the molecular vibrational modes is dominated by large-amplitude vibrational Feshbach resonances (VFR) in which the positron attaches to the molecule.² In small molecules, there is a quantitative description of the annihilation rates, Z_{eff} .³ This talk focuses on other resonant annihilation phenomena that are less well understood. A broad spectrum of enhanced annihilation will be described that is observed in the annihilation spectra of many, if not most molecules. This spectral component, for example, dominates the spectrum in small molecules with relatively large binding energies such as CCl_4 and CBr_4 . The relationship of this seemingly ubiquitous feature to a model of statistically complete resonant, multi-mode annihilation⁴ will be discussed.

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²G. F. Gribakin, J. A. Young, and C. M. Surko, *Rev. Mod. Phys.* **82**, 2557 (2010).

³G. F. Gribakin and C. M. R. Lee, *Phys. Rev. Lett.* **97**, 193201 (2006).

⁴G. F. Gribakin and C. M. R. Lee, *Eur. Phys. J. D* **51**, 51 (2009).

James Danielson
University of California, San Diego

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