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Positronium formation from C_{60}[1] PAUL-ANTOINE HERVIEUX, Universite de Strasbourg, CNRS, Institut de Physique et Chimie des Materiaux de Strasbourg, France, ANZUMAAN CHAKRABORTY, HIMADRI CHAKRABORTY, Northwest Missouri State University, Maryville, USA — Due to the dominant electron capture by positrons from the molecular shell and the spatial dephasing across the shell-width, a powerful diffraction effect universally underlies the positronium (Ps) formation from C_{60}. This results into trains of resonances in the Ps formation cross section as a function of the positron beam energy [1], producing structures in recoil momenta in analogy with classical single-slit diffraction fringes in the configuration space. C_{60} is modeled by a jellium-based local-density approximation (LDA) method [2] and the Ps formation is treated by the continuum distorted-wave final-state (CDW-FS) approximation [3]. The work may motivate application of the Ps formation spectroscopy to gas-phase nanoparticles and also the access target-level- as well as Ps-level-differential measurements. [1] Hervieux et al (submitted), arXiv:1610.00335 [physics.atm-clus]; [2] Choi et al (submitted), arXiv:1610.00346 [physics.atm-clus]; [3] Fojon et al, Phys. Rev. A **54**, 4923 (1996)

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