

Abstract Submitted
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**Strong-field above-threshold ionization in laser-irradiated C₆₀:
The signatures of orbital symmetry and intramolecular interference**
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istan — We report about the results of our theoretical study of strong-field
(multiphoton) above-threshold ionization (ATI) in laser-irradiated carbon fullerene
molecule C₆₀ under condition of relevant experiment [1]. The problem is addressed
within the *velocity-gauge* (VG) formulation of molecular *strong-field approxima-
tion* (SFA) [2] essentially exploiting the *density-functional-theory* (DFT) method
for numerical composition of initial (laser-free) molecular state using the routines
of GAUSSIAN-03 code [3]. The results of our present VG-SFA calculation for C₆₀
photoelectron energy spectra (PES) demonstrate two distinct (well-separated) and
pronounced local interference minima - in the low-energy and the high-energy do-
mains of produced PES - both arising due to destructive *intramolecular (multislit)*
quantum interference of strong-field ionization corresponding to photoelectron emis-
sion from multiple separate atomic centers.

[1] M. Tchapyguine *et al.* J. Chem. Phys. **112**, 2781 (2000)

[2] V. I. Usachenko *et al.* Phys. Rev. A **79**, 023415 (2009)

[3] M. J. Frisch and J. A. Pople. **Gaussian-03, Revision A.1** (Gaussian, Inc.,
2003 Pittsburgh, PA)

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