

Abstract Submitted
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Attoclock setup with negative ions: A possibility for experimental validation.¹ KLAUS BARTSCHAT, Drake University, NICOLAS DOUGUET, University of Central Florida — The presumed connection in attoclock setups between the electron tunneling time and its asymptotic momentum has triggered vigorous debates (e.g., [1-3]). In neutral atomic systems investigated so far, including Ar and Kr [4] as well as atomic hydrogen [5], the action of the long-range Coulomb potential on the electron momentum hinders extracting the effect of the tunneling process on the offset angle of the asymptotic electron momentum. We propose and investigate an attoclock setup using F^- or Cl^- to circumvent this difficulty. Our calculations, performed with realistic laser parameters in the tunneling regime, predict essentially a “zero” offset angle with no detectable effect of polarization. Most importantly, the predictions could be checked directly against experiment. [1] A. N. Pfeiffer *et al.*, *Nat. Phy.* **8** (2012) 76. [2] L. Torlina *et al.*, *Nat. Phy.* **11** (2015) 503. [3] H. Ni, U. Saalman, and J.-M. Rost, *Phys. Rev. Lett.* **117** (2016) 023002. [4] N. Camus *et al.*, *Phys. Rev. Lett.* **119** (2017) 023201. [5] U. S. Sainadh *et al.*, *Nature* (2019), in press; arXiv:1707.05445. (2018).

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