

Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Vortices in electron momentum distributions¹ SERGUEI OVCHINNIKOV, University of Tennessee & Ioffe Institute, JOSEPH MACEK, University of Tennessee & Oak Ridge National Laboratory, JAMES STERNBERG, University of Tennessee — Recent computations of the electron distributions for proton impact ionization of hydrogen atoms have shown unexpected “holes,” which are associated with vortices in the continuum part of time-dependent wavefunctions [1]. We find that the electron distributions calculated in the framework of the Impact-Parameter-Born approximation have the same holes. In contrast, the electron distributions in the Born approximation have no vortices but they appear in the Coulomb Born approximation.

[1] J.H. Macek, J.S. Sternberg, S.Y. Ovchinnikov, T-G. Lee, and D.R. Schultz, submitted for publication.

¹This research is sponsored by the Division of Chemical Sciences, Office of Basic Energy Sciences, U.S. Department of Energy, under grant DE-FG02-02ER15283.

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Date submitted: 22 Jan 2009

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