

Abstract Submitted  
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**Deep minimum in the Ps-formation differential cross section for positron-helium collisions in the Ore gap**<sup>1</sup> S, J. WARD, ALBANDARI W. ALROWAILY<sup>2</sup>, Univ of North Texas, P. VAN REETH, University College London — Using the *s*-, *p*-, *d*- and *f*-wave complex Kohn K-matrices for positron-helium collisions in the Ore gap [1] we have computed the Ps-formation differential cross section. We found a deep minimum in the cross section that corresponds to a zero in the Ps-formation scattering amplitude and a vortex in the extended velocity field [2] that is associated with this amplitude. Using the Watanabe and Greene's multichannel effective range theory [3] and polynomial fits of the K-matrices we are exploring the importance of the polarization potential in the Ps-He<sup>+</sup> channel

[1.] P. Van Reeth and J. W. Humberston, J. Phys. B **32** 3651 (1999).

[2.] A. W. Alrowaily, S. J. Ward and P. Van Reeth, J. Phys. B **52** 205201 (2019).

[3.] S. Watanabe and C. H. Greene, Phys. Rev. A **22** 158 (1980).

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