

Abstract Submitted  
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**Fully relativistic B-spline R-matrix calculations for electron collisions with mercury**<sup>1</sup> OLEG ZATSARINNY, KLAUS BARTSCHAT, Drake University — We have applied our recently developed fully relativistic Dirac *B*-spline *R*-matrix (DBSR) code [1] to calculate electron scattering from mercury atoms. Results from a 36-state close-coupling calculation are compared with numerous experimental benchmark data for angle-integrated and angle-differential cross sections, as well as spin-asymmetry, spin-polarization, and electron-impact coherence parameters. We generally obtain significant improvement in the agreement between experiment and theory compared to previous distorted-wave and close-coupling attempts. [1] O. Zatsarinny and K. Bartschat, Phys. Rev. A **77**, 062701 (2008).

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