Abstract Submitted
for the GEC16 Meeting of
The American Physical Society

Vibrational excitation and vibrationally resolved electronic excitation cross sections of positron-H_2 scattering[1] MARK ZAMMIT, Theoretical Division, Los Alamos National Laboratory, DMITRY FURSA, JEREMY SAVAGE, IGOR BRAY, Curtin University — Vibrational excitation and vibrationally resolved electronic excitation cross sections of positron-H_2 scattering have been calculated using the single-centre molecular convergent close-coupling (CCC) method. The adiabatic-nuclei approximation was utilized to model the above scattering processes and obtain the vibrationally resolved positron-H_2 scattering length. As previously demonstrated [1], the CCC results are converged and accurately account for virtual and physical positronium formation by coupling basis functions with large orbital angular momentum. Here vibrationally resolved integrated and differential cross sections are presented over a wide energy range and compared with previous calculations and available experiments. [1] M. C. Zammit *et al*. J. Phys. Conference Series **635**, 012009 (2015).

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Date submitted: 09 Jun 2016 Electronic form version 1.4