Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Low-Energy Positron Scattering from H_2[1] J.R. MACHACEK, E. ANDERSON, C. MAKOCHEKANWA, Centre for Antimatter-Matter Studies, D. MUELLER, University of North Texas, J.P. SULLIVAN, S.J. BUCKMAN, Centre for Antimatter-Matter Studies — We present low-energy positron scattering measurements from molecular hydrogen. Our measurements were conducted at the high-resolution, low-energy positron beamline at the Australian National University [1]. The energy width of the positron beam was typically 60 meV. We present results for positron scattering from H_2 from 1 to 200 eV for the total and positronium formation cross sections as well as total elastic and elastic differential cross sections. Comparison will be made with previous results, in particular recent results of the Trento group [2], along with a discussion of the experimental advantages and limitation of present techniques [3]. The greatest discrepancy between the available experimental and theoretical data sets lies at energies below the positronium formation threshold. A plausible explanation for these differences will be presented.

[1] J. P. Sullivan *et al.*,**79**, 113105 (2008)
[2] A. Zecca *et al.*, Phys. Rev. A **80**, 032702 (2009)
[3] J. P. Sullivan *et al.*, J. Phys. B **44**, 035201 (2010)

[1]This work is supported by the Australian Research Council through its Centre of Excellence Program.

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Date submitted: 31 Jan 2012 Electronic form version 1.4