

Abstract Submitted
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Trends in Positron Scattering from the Noble Gases¹ J. MACHACEK, C. MAKOCHEKANWA, A. JONES, P. CARADONNA, R. MCEACHRAN, J. SULLIVAN, S. BUCKMAN, CAMS, Australian National University, Canberra — We have a program of low energy (0.5 - 60 eV), high resolution (60 meV), positron scattering from atoms and molecules which is facilitated by a high-flux, trap-based positron beamline facility at the Australian National University [1]. The positron beam is pulsed, operating at about 100 Hz and typically containing about 1000 positrons. For noble gases, our goals range from establishing ‘benchmarks’ for positron scattering cross sections, to the investigation of threshold effects in processes such as positronium formation and ionization. This paper will present examples of trends observed in a number of scattering processes in He, Ne, Ar, Kr and Xe, and include investigations of elastic differential cross sections and the observation of Wigner cusps in the elastic channel at the Ps threshold. Where possible, the current experimental results will be compared with the best available theoretical calculations, and other experimental data from the literature.

[1] J. P. Sullivan, A. Jones, P. Caradonna, C. Makochekanwa, S. J. Buckman, *Rev. Sci. Instrum.* **79**, 113105 (2008)

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Stephen Buckman
CAMS, Australian National University, Canberra

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