

Abstract Submitted  
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**Electron and positron scattering experiments** JAMES SULLIVAN, RSPHysSE, Australian National University, ADRIK JONES, PETER CARADONNA, ANDREW MANNING, TERRANCE SAK, STEPHEN BUCKMAN, CENTRE FOR ANTIMATTER-MATTER STUDIES COLLABORATION — The final commissioning of the Australian Positron Beamline Facility is almost complete, and it is anticipated that the first experimental results for positron scattering will be obtained this year. In addition, a novel electron scattering experiment has been constructed making use of the same scattering techniques. While the APBF uses a Surko trap to generate a cold, pulsed positron beam, the new electron scattering experiment makes use of thermionic emission and a pulsed electrode to make a similarly pulsed electron beam. By using a retarding potential difference technique, the energy spread of the electrons is able to be reduced compared to the initial distribution from the filament before being directed to a scattering cell. The scattering and analysis is the same as that for the Surko scheme, but due to the compact nature of the electron source, the experiment is highly compact and correspondingly inexpensive. This poster will present the current state-of-play with the positron scattering program at the ANU, along with a detailed explanation of the construction and operation of a cheap, yet effective, experiment to perform electron scattering measurements. An outline of the proposed experimental program for both apparatus will also be given.

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