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Application of the convergent close-coupling method to positron annihilation¹ RAVSHANBEK UTAMURATOV, DMITRY FURSA, ALISHER KADYROV, IGOR BRAY, Curtin University — Positron annihilation is one of the most interesting and essential processes in studies of positron transport in media. Calculation of positron annihilation rates is complicated due to its high sensitivity to the accuracy of the scattering wavefunction. As a result, there are not many calculations of annihilation rates even for the simplest case of positron-hydrogen system. The convergent close-coupling method (CCC) has been very successful in obtaining accurate scattering data on a wide range of collision energies. In this report, we present application of the CCC method to calculations of positron annihilation. Detailed studies of convergence combined with internal consistency of large single- and two-centre expansions indicate a high accuracy of the results.

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