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Resonances of exotic three-body atomic systems

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In scattering quantum theory, resonances play a central role for determining the lifetime of the state of a system. By means of the Lagrange-mesh method (LMM), such resonances can be accurately studied. By combining the LMM to the complex scaling method, I present accurate computations of the resonances of the negatively charged positronium ion for low orbital momenta (L=0,1). In addition, by combining the LMM and the Kohn variational method, I present accurate computations of the resonances of the antiprotonic helium atom for a vast range of angular momenta (from L=0 to 80).

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