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Resonances in dipositronium. JOSEPH DIRIENZI, College of Notre Dame of Maryland, RICHARD DRACHMAN, NASA-Goddard Space Flight Center — Previously we studied the possible resonances in PsH.[1], assuming Ps^- interacting with H^+ as the principal configuration. Now we look at the resonances in Ps_2 in a similar manner with Ps^- and e^+. In this situation we use a variational method to determine the radial function of the bound state. We first look at the system without any exchange of electrons and positrons. Then we examine the system by including electron exchange but no positron exchange. In these two cases the solution of the variational equation involves a local effective potential. The predicted energy levels are fairly close in both these cases. The full problem also includes antisymmetrization of the two positrons giving rise to a non-local potential and increasing the mathematical difficulty of determining the resonant states. [1] J. DiRienzi and R.J. Drachman, Physical Review A, **76**, 032705 (2007)

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