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***Ab Initio* Calculation of Double Photoexcitation of Helium below the $N = 2$ Threshold in a Strong dc Electric Field** JOHN HESLAR, National Taiwan University, SHIH-I CHU, University of Kansas, National Taiwan University — We present a complex-scaling (CS)-generalized pseudospectral (GPS) method in hyperspherical coordinates (HSC) for an accurate *ab initio* and accurate treatment of the electron structure and quantum dynamics of two-electron systems. The GPS method allows non-uniform and optimal spatial discretization of the two-electron Hamiltonian in HSC with the use of only a very modest number of grid points. The procedure is applied for the precision calculation of the energies and widths of doubly-excited Rydberg resonance states as well as the ionization rates of He atoms in an external electric field of 84.4 kV/cm. The effects of dc-field ionization rates on the $1S^e$, $1P^o$, and $1D^e$ states where $n = 10 - 20$ have been identified.

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