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## Three-body recombination between helium and silver atoms at cold collision energies

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Three-body recombination between helium and silver atoms is studied using hyperspherical coordinates. The three-body Schrödinger equation, represented in the slow variable discretized approach at short distances and in the adiabatic method at large distances [1] and using the potential-energy surface represented as the addition of realistic He-He and He-Ag pair interaction potentials [2][3], is solved using the  $R$ -matrix propagation method [4], in order to numerically calculate the three-body recombination rates for the the He+He+Ag $\rightarrow$ He<sub>2</sub>+Ag and He+He+Ag $\rightarrow$ HeAg+He processes. Not only zero-angular momentum  $J = 0$  states but also nonzero  $J > 0$  states are considered in the calculations, allowing for treating the recombination processes at collision energies beyond the threshold regime. The results of our calculations will be presented and discussed.

[1] J. Wang et al., Phys. Rev.A 84, 052721 (2011).

[2] R.A. Aziz and M.J. Slaman, J. Chem. Phys. 94, 8047 (1991).

[3] J.C. Xie et al., Chem. Phys. Lett. 605-606, 137 (2014).

[4] K.L. Baluja and P. G. Burke, Comp. Phys. Comm. 27 299 (1982).

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