Erratum: Ionization spectra of highly Stark-shifted rubidium Rydberg states [Phys. Rev. A **96**, 013427 (2017)]

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The program that we have used to perform the numerical calculations presented in our article contained an inconsistent conversion between atomic units and SI units for the matrix representation of $\hat{H}_{\text{CAP}}$. The calculated ionization spectra are nonetheless unaffected by this because the free parameter η essentially incorporated all conversion coefficients. In order to clarify this matter, we here give η in units of E_h/a_0^6 , where E_h is the Hartree energy and a_0 is Bohr's radius. However, since our calculations also included a conversion from energies to frequencies in SI units, the values of η from our article have to be multiplied by a factor of h/E_h , where h is Planck's constant. The parameters with corrected units are then $\eta = 1.52 \times 10^{-10} E_h/a_0^6$ for the ionization spectrum near $43S_{1/2}$ and $\eta = 3.04 \times 10^{-11} E_h/a_0^6$ near $70S_{1/2}$.

On a separate note, we have stated in our article that the matrix representation of the complex absorbing potential (CAP) is purely diagonal. Although this would be automatically the case for hydrogen where the radial and the angular parts of the electron wave functions are orthogonal, the matter is slightly more complicated for the numerical calculations we have performed for rubidium. We have calculated the radial wave functions by numerically integrating the radial Schrödinger equation using not the actual eigenenergies of the Hamiltonian but the energies from the Rydberg formula including experimentally obtained quantum defects. This results in radial wave functions which are not perfectly orthogonal. Ultimately, this would cause the matrix representation of the CAP to exhibit nonzero entries for $\Delta l = 0$, $\Delta j = 0$, and $\Delta m_j = 0$ at arbitrary values of Δn . However, in our calculations we have set these entries to zero as they would couple these different states *via the continuum*, which we have deemed unrealistic. Therefore, the matrix representation of the CAP that we have used in our calculations is still purely diagonal.

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