

# Shape of Double Ionization Yield Profile for Many-Electron Atoms

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Ionization yields are the most accessible type of experimental information available in studies of interaction of atoms with strong laser fields. They are one of the primary sources of information about strong field dynamics. For example, a knee-like shape of double ionization yields dependence of He on laser field intensity allowed one to establish a model of Non-sequential double ionization (NSDI). One further researches the properties of such a model for more complex atoms. We study how the dependence of double ionization yield on intensity of external laser field is reshaped if multiple electrons configuration of atom is taken into account. We create a semi-analytic model for non-sequential double ionization based on Quantitative Rescattering Theory (QRS) and compare its predictions to the result of numerical ab initio simulations. In order to facilitate the numerical simulation, we employ the single-dimensional model of three-electron atom that we used in our previous investigations [1]. We have found out that spin configuration of atom profoundly affects the shape of the double-ionization knee.

## References

- [1] D K Efimov, J S Prauzner-Bechcicki, J H Thiede, B Eckhardt and J Zakrzewski, Phys. Rev. A **100**, 063408 (2019)