

# Multiple-active-electron calculations for ion-atom collisions

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Ion-atom collisions involving one-active-electron systems have been thoroughly investigated in the keV energy range (i.e. in the so-called non-perturbative domain) and converged simulations have been achieved for many of them. This is not true when two or more electrons actively participate to the collision dynamics, for which there is room for improving the currently available calculations. In this progress report, I will summarize the new theoretical developments our group has made in this context. I will then present some illustrative and remarkable studies [1-3] we have recently conducted thanks to these developments.

[1] Gao J. W., Wu Y., Sisourat N. Wang J. G. and Dubois A. 2017 *Phys. Rev. A* **96**, 052703

[2] Gao J. W., Wu Y., Sisourat N. Wang J. G. and Dubois A. 2018 *Phys. Rev. A* **97**, 052709

[3] Gao J. W., Wu Y., Wang J. G., Dubois A. and Sisourat N. under press in *Phys. Rev. Lett*