

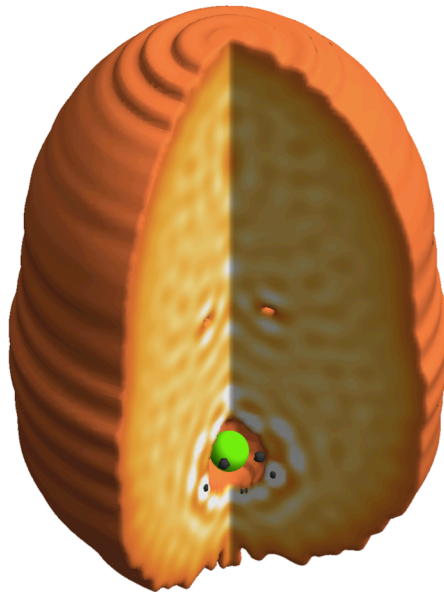
Real-time dynamics of impurities in helium nano droplets

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I will present results of a series of simulations [1-7] obtained within TDDFT on the real time dynamics of neutral atoms and cations immersed in helium nano droplets, comparing them with experiments whenever possible. Potential applications and limitations of the method will be discussed.

- 1.- A. Hernando et al, PCCP **14**, 3996 (2012)
- 2.- N.B. Brauer et al, PRL **111**, 153002 (2013)
- 3.- D. Mateo et al, PCCP **15**, 18388 (2013)
- 4.- D. Mateo et al, JCP **140**, 131101 (2014)
- 5.- von Vangerow et al, JPC A **118**, 6604 (2014)
- 6.- A. Leal et al, PCCP **16**, 23206 (2014)
- 7.- A. Leal et al, PRB **90**, 224518 (2014)



Dynamic evolution of a Ba⁺ cation (green) immersed in a ⁴He₁₀₀₀ droplet. On top of it, near the center of the droplet, it can be seen a vortex ring nucleated during the sinking of the cation produced by photoionization of a neutral Ba atom at the surface of the droplet.