Education

PhD (October 2021-May 2024)

Title:*Theoretical study of superfluid helium nanodroplet dynamics: cluster formation, ion solvation, Coulomb explosion, quantum vortex nucleation and detection*

Lab: Laboratoire Collisions Agrégats Réactivité (LCAR) Toulouse, France

Thesis advisor: Nadine Halberstadt

- Superfluid 4HeN nanodroplets
- Helium Time Dependent Density Functional Theory (4He TD-DFT)
- Superfluidity
- Coulomb explosion of Ak2 on 4HeN nanodroplet
- Clusterization of foreign atoms within 4He nanodroplets
- Coalescence of 4HeN nanodroplets
- Quantum Vortices

Master in physics. Havana University (Cuba), Physics Faculty**.** *Study of the Vibrational Predissociation of the NeBr2 Complex by Computational Simulation Using the Trajectory Surface Hopping Method*

Thesis advisor: Maykel Marquez Mijares and Jesús Rubayo Soneira

- Van der Waals complexes
- Molecular Dynamics
- Quasiclassic Method
- Trayectory Surface Hopping (TSH)
- C++ language (I built my own package for calculating TSH)
- Wolfram Mathematics