

RAUL GONZALEZ RAMOS

@raul_phys@hotmail.com

+44 7734625661

raul-gonzalez-19275201phy

PROFILE

I am a highly motivated MSc Physics graduate from the University of Bristol specialising in Quantum Thermodynamics and driven by a profound interest in Quantum Information Theory. I am proficient in problem-solving, data analysis, and statistical techniques developed through coursework and a research project. On a personal level, I enjoy spending time with people, doing sports, reading books (specially if written by Carlos Ruiz Zafon) and playing video games. I consider humour to be a fundamental part of life.

EDUCATION

M.Sc. in Physics (2:1)

University of Bristol

Oct 2019 – 2023

Courses include: Computational Physics; Quantum Information Theory; Advanced Quantum Mechanics; Relativistic Field Theory; General Relativity and Cosmology; Methods for Theoretical Physicist; Analytical Mechanics; Solid State Physics; Thermal Physics;

Projects

Exploring Quantum Non-Equilibrium Steady States as Thermal Machines

Quantum Thermodynamics. M.Sc. Project.

- Aim: To test the validity regime of the Thermodynamic Uncertainty Relation (TUR) by simulating the interaction between two qubits performing work on a load.
- Methods: Producing two codes with different approaches, Schrödinger and Heisenberg pictures, to calculate numerically the relevant observables, making use of ordinary differential equation solvers amongst other techniques.
- Results: We found that the TUR quantum bound could be violated for a range of the entropy production rate, opening a line of research towards understanding the restrictions of the TUR for quantum systems.

Measuring the lifetime of an unstable particle

Computational Physics. Final Project.

- Aim: To simulate an experiment designed to measure the lifetime of an unstable particle before decaying.
- Methods: Code created by using Monte Carlo methods to simulate the production, decay, and detection of particle X and its daughter.
- Results: By extrapolating back from hit positions, the decay vertex position was reconstructed. Using the distribution of decay points, along with the known average beam velocity, the mean lifetime of the particle X was estimated.

Excellent verbal and written communication skills - for the Final and Group Project, I had to create and expose a presentation, introducing and explaining complex and deep concepts to my colleagues, who were unfamiliar with these topics. This helped me to further develop my ability to explain and transmit difficult concepts in an efficient way.

EXPERIENCE

Waiter

Tapas Revolution Restaurant

Aug 2018 – Apr 2023 Bath

- Addressed customer requests promptly, providing personalised service and ensuring a positive dining experience.
- Collaborated with waitstaff and kitchen staff in fast-paced environments, adjusting priorities and multitasking effectively.

ADDITIONAL SKILLS

Coding Languages

Python, Matlab, LaTeX

Languages

Spanish: C2 (Native), English: C1

Driving licence

B