Juan d'Etigny Susaeta

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EDUCATION

Universidad de Chile — **Santiago, Chile**
MsEng. Applied Mathematics — *2019 – 2022*

Universidad de Chile — **Santiago, Chile**
BE. Mathematical Engineering — *May 2013 – Sep 2019*

Universidad de Chile — **Santiago, Chile**
Bsc. Astronomy — *May 2013 – Sep 2019*

RESEARCH, WORK AND TEACHING EXPERIENCE

Research Assistant, Universidad de Chile *2019-2022*

- Worked in the full development, deployment and analysis of high-performance computational simulations focused in problems involving supermassive black hole binaries, AGNs and their feedback processes. During this time I also worked in areas regarding galactic mergers and black hole formation.

Teaching Assistant, Universidad de Chile *2018-2022*

- FI6014 – Introduction to Astrophysics
- AS4107/AS4901 – Guided Research in Astronomy
- AS4109 – Theory of Galaxies
- AS4101 – Galaxy Astrophysics
- MA2002 – Advanced Calculus and Applications
- MA5505 – Graph Theory
- MA1101 – Introduction to Algebra

Full instructor, EdV - Universidad de Chile *2019*

- Taught and developed the curriculum for the course 'Claves matemáticas para Aprender Física', at Universidad de Chile's EdV program for high school students

Research internship, Pontificia Universidad Católica de Chile *2019*

- Worked with professor Ezequiel Treister at PUC's department of Astrophysics, characterizing and analyzing a sample of (U)LIRG objects for big project observation proposals at MUSE-Paranal

Research internship, Universidad de Chile *2018*

- Worked with professor Marcos Orchard at UCH's department of electrical engineering, developing Bayesian experimental design methods for optimal decision problems in the context of stellar visual binaries

Research internship, Universidad de Chile *2017*

- Worked with professor Andrés Escala at UCH's department of astronomy, developing a numerical method for finding instant rotation centers in later stages of galaxy merger simulations

CODING AND COMPUTER SKILLS

- Programming languages: **Python**, **MATLAB**, **Fortran**, **C++**
- Dedicated codes/languages: **RAMSES, AMUSE, AMPL, BOCOP, FreeFem**
- Additional skills: **Linux/macOS, SLURM Workload manager, LaTeX, Office suite, Github**

LANGUAGE

- **Español**: Native
- **English**: Bilingual-level proficiency (99th percentile TOEFL scores)

CERTIFICATES AND DISTINCTIONS

- **TOEFL**: 116/120
- **General GRE**: Q-169/170, V-166/170, W-4.5/6.0 (94th, 97th and 80th percentiles)
- **M.Sc. academic excellence scholarship from UCH-CMM**, 2020
- **Phd. Fulbright Fellowship**, 2021 (Declined as I chose not to pursue further studies)
- **FCFM Outstanding student**, 2013, 2014, 2017

PUBLICATIONS

- *Black Hole Fueling in Galaxy Mergers: A high-resolution analysis*.
  J. Prieto, A. Escala, GC. Privon & **J. d'Etigny**. 2021, MNRAS, 508, 3672.
- In prep: *The structural and orbital effects of AGN feedback on SMBH binaries embedded in gaseous circumbinary disks*.
  J. d'Etigny & A. Escala
- In prep: *Effects of radiation feedback on SMBH spin evolution and spin/binary alignment*.
  J. d'Etigny & A. Escala