EVA DURÁN CAMACHO

Astrophysics Researcher

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Education

2020–present **PhD, Astrophysics**, *Cardiff University*, Cardiff, United Kingdom.
Numerical simulations of Milky Way type Galaxies using the state-of-the-art moving mesh code AREPO. Studying the structure of our Galaxy and zooming into smaller regions where star formation processes can be studied. Statistical comparison of our models with observations.
Supervisors: Dr. Ana Duarte Cabral & Dr. Paul Clark

2019–20 : **MASt in Astrophysics**, *University of Cambridge*, Cambridge, United Kingdom.
Searching for extremely metal-poor stars with GAIA: Based on the usage of Gaia as a database to find extremely metal-poor stars in the Galactic Halo. Artificial Neural Networks were the main technique applied in the study
Supervisors: Dr. Giorgia Busso, Dr. Francesca D'Angeli and Prof. Mike Irwin

2015–19 : **Grado en Física**, *Universidad Autónoma*, Madrid, Spain.
1. Study and comparison of intermediate-mass T Tauri and its counterparts the Ae/Be stars based on their spectra and position in the Hertzsprung-Russel diagram. Supervisor: Prof. Gwendolyn Meeus
2. Observations of the star AE UMA at Calar Alto Observatory, Almería (Spain). Data reduction and analysis. Supervisor: Dr. Yago Ascasibar

Summer Schools

Jul 2021 : **Interstellar Medium of Galaxies, from the Epoch of Reionization to the Milky Way**, *International Summer School*, IAU, Virtual Edition.

Honours & Awards

Mar 2023 ***Taith Mobility Grant*** (1280€), Higher Education – Research Mobility in Heidelberg (Germany)

Aug 2022 ***IAU Travel Grant*** (1682€), International Astronomical Union (IAU)

Aug 2022 ***KAS Travel Grant*** (318€, accommodation), Korean Astronomical Society (KAS)

Jun 2022 ***Travel Grant*** (1594$), Flatiron Institute (New York, USA)

2015–2019 : **Distinctions**, *Physics Degree*, Universidad Autónoma, Madrid, Spain.
Distinction in a series of subjects: Análisis I (1st year), Electromagnetismo I (2nd year), Métodos Matemáticos Avanzados and Electrodinámica Clásica (3rd year), Física Atómica y Molecular and Física del Cosmos (4th year)

Conferences & Seminars

Nov 2023: **Star formation in the Milky Way and beyond**, *RAS meeting*, London, UK, Contributed Talk .

Oct 2023: **Invited Seminar at Stefanie Walch-Gassner's Group**, Cologne, Germany.

Sept 2023: **AREPO development workshop for ISM simulations**, *Manchester, UK*, Contributed Talk.

Jul 2023: **National Astronomical Meeting**, *Astrophysical Simulations: Keeping up with the Frontier*, Cardiff, Wales, Contributed Talk .

Jul 2023: **National Astronomical Meeting**, *Star formation across the Milky Way*, Cardiff, Wales, Contributed Talk.

Jun 2023: **Star at Lyon: The Physics of Star Formation**, *Lyon*, France, Poster.

Jun 2023: **Invited Seminar at the Galaxy Evolution Research Group**, *Oxford University*, Oxford, UK.

Jun 2023: **Star Formation in the era of JWST**, *Paralia Katerinis*, Greece, Poster.

Apr 2023: **Invited Seminar at the ISM Research Group**, *Heidelberg University*, Heidelberg, Germany.

Aug 2022: **Star Formation in Different Environments**, *ICISE*, Quy Nhon, Vietnam, Contributed Talk.

Aug 2022: **IAU Symposium 373: Resolving the Rise and Fall of Star Formation in Galaxies**, *IAU General Assembly XXXI*, Busan, South Korea, Poster.

Jun 2022: **From Stars to Galaxies II: Connecting our understanding of star and galaxy formation**, *Chalmers*, Gothenburg, Sweden, Poster.

Jun 2022: **Computational Astrophysics in the ngVLA Era: Synergistic Simulations, Theory, and Observations**, *Flatiron Institute*, New York, USA, Poster.

Jan 2021: **UKRI STFC Introductory Course in Astronomy for New Research Students**, *Armagh Observatory and Planetarium*, Virtual Editon , Contributed Talk.

Jun 2021: **Conference for Astronomy and Physics Students (CAPS '21)**, *University of Birmingham*, Virtual Editon , Poster.

Nov 2021: **10th IRAM 30-meter School on Milimiter Astronomy**, *Institut de Radioastronomie Millimétrique*, Virtual Editon , Attendee.

Publications

2023 **Ge, Y.**, et al. (including **Durán-Camacho. E.**), *Large-scale Velocity-coherent Filaments in the SEDIGISM Survey: Association with Spiral Arms and Fraction of Dense Gas, A&A*.

Submitted

Durán-Camacho. E. , et al., *Self-consistent modelling of the Milky Way structure using live potentials*, MNRAS submitted.

Publications in preparation

Durán-Camacho. E. , et al., *From Stars to Gas: a simulation-based exploration of the Milky Way dynamics I*.

Durán-Camacho. E. , et al., *From Stars to Gas: a simulation-based exploration of the Milky Way dynamics II*.

Conference Proceedings

2022 **Durán-Camacho. E.** , Duarte-Cabral, A., *Milky Way: structure via live potentials*.
International Astronomical Union Proceedings Series

Research Projects

Summer 2020: **Evolution of T Tauri Stars**, *University of Cambridge*, UK.
Studying the effects of magnetic fields and rotation on the evolution of the early type of stars T Tauri using the STARS code created at the University of Cambridge. Advisor: Prof.Christopher Tout

Teaching & Outreach

Jul 2023: **Outreach events at the National Astronomical Meeting (NAM)**, Volunteer, Cardiff, UK.

Jun 2023: **Astronomy on Tap**, Organising Committee, Cardiff, UK.

2020-21: **The Physics Mentor Project**, Mentor, Cardiff, United Kingdom.

2020-23 : **Introduction to Astrophysics, Computational Physics, Computational Skills for Problem Solving, Atomic and Nuclear Physics, Optics, Environmental Physics**, *1st-3rd year Physics*, Demonstrator, Cardiff University.

Working Experience

Jul–Aug '18 : **Researcher**, *University of Cambridge*, Cambridge, United Kingdom.
Internship at the Institute of Astronomy. I worked on the evolution of T Tauri stars using the STARS code. Supervisor: Christopher Tout

Jan–Jun '18 : **Laboratory Technician**, *Universidad Autónoma*, Madrid, Spain.
Laboratory technician at the Condensed Matter Department. Worked for a PhD student extracting graphene samples from graphite

Nov '16 – May '19 : **Tutoring**, Madrid, Spain.
High school students. Subjects: Physics, Mathematics and Chemistry

Computational skills

Programming: AREPO,Python, Matlab, C++

Documents: LaTeX, Adobe, Word, Excel, PowerPoint

Plotting: DataStudio, TopCat, SciDavis, CARTA, SAOImageDS9, Glue