

CAMILA CORREA

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- KEYWORDS** **Computational Cosmology Science**
Astrophysics, Galaxy formation, Cosmology, Data Science, Computer Science.
- WORK EXPERIENCE** **VENI Researcher, University of Amsterdam** **Nov 2019 - Present**
Independent researcher position, member of the theoretical physics group GRAPPA. Leading a new theoretical program that connects the fields of astrophysics, particle physics and computer science.
- Postdoctoral Researcher, Leiden University** **March 2016 - Nov 2019**
Member of Prof. Joop Schaye's research group. I developed new algorithms for cosmological simulations of galaxy formation and investigated various aspects of galaxy evolution.
- EDUCATION** **PhD in Physics, University of Melbourne, Australia** 21 Jun 2016
Topic: Cosmology and Galaxy formation.
Thesis: The accretion history of dark matter halos
Advisors: Prof. Stuart Wyithe & Prof. Alan R. Duffy
- Master in Astronomy, University of La Plata, Argentina** 11 Nov 2011
Topic: General Relativity. Thesis: Thermodynamics of Regular Black Holes Interiors.
- REFEREED PUBLICATIONS** I have 10 first author refereed publications out of 18 articles in total, with a combined citation count of 589 (474 as first author); h-index of 12 and g-index of 15. The impact factor of the Monthly Notices of the Royal Astronomical Society Journal (MNRAS) is 4.69. Below a list of 5 key publications.
- Correa, C. A.** (2021). MNRAS. 503, 1, 920. *Constraining Velocity-dependent Self-Interacting Dark Matter with the Milky Way's dwarf spheroidal galaxies*. Citations: 29.
- Correa, C. A. & Schaye, J.** (2020). MNRAS. 499, 3, 3578. *The dependence of the galaxy stellar-to-halo mass relation on galaxy morphology*. Citations: 14.
- Correa, C. A.; Schaye, J.; Clauwens, B.; Bower, R. G.; Crain, R. A.; Schaller, M.; Theuns, T.; Thob, A. C. R.** (2017) MNRAS Letters, 472, issue 1, L45. *The relation between galaxy morphology and colour in the EAGLE simulation*. Citations: 58.
- Correa, C.A.; Wyithe, J.S.B.; Schaye, J.; Duffy, A.R.** (2015c) MNRAS, 452, 1217. *The accretion history of dark matter haloes - III. A physical model for the concentration-mass relation*. Citations: 148.
- Correa, C.A.; Wyithe, J.S.B.; Schaye, J.; Duffy, A.R.** (2015a) MNRAS, 450, 1514. *The accretion history of dark matter haloes - I. The physical origin of the universal function*. Citations: 85.
- AWARDS & GRANTS** **PRACE Network.** 5M core-CPU hours, TangoSIDM (PI: C. Correa) 2021
I was awarded 5 Million (5M) core-CPU hours for the TangoSIDM project, which aims to constrain the rate of dark matter particles interactions on dwarf galaxies scales.
- Surfara Network** 1M core-CPU hours, TangoSIDM (PI: C. Correa) 2020-2021
This computing time was used to design new algorithms, code development and optimization, and run-time testing.

PRACE Network 50M core-CPU hours, Colibre collaboration (PI: J. Schaye) 2020
The collaboration from Leiden University, which I form part, was awarded 50M core-CPU hours for the production of a new generation of hydrodynamical cosmological simulations.

HPC-Europa3 Individual Research grant: 120k core-CPU hours + EUR\$3k. 2020

NWO-VENI Grant Individual Research grant: EUR\$250k 2019-2023
The VENI grant is a prestigious research grant in the Netherlands. The Dutch research council awards the grant yearly to the top 160 young researchers from all scientific areas. The award rate among women is 17%.

The John Hodgson Scholarship Research grant: AU\$3k 2013

Research fellowship AU\$27k (p.a.) 2012-2016
Granted by Prof. Wyithe, Australian Research Council Laureate Fellowship

Research fellowship ARG\$3k (p.a.) 2008-2011
Granted by the Faculty of Astronomy, University of La Plata, Argentina.

STUDENT SUPERVISION

Noemi Montel May 2021-Present
PhD student, University of Amsterdam. I am the main supervisor of her project, *Signatures of self-interacting dark matter on local dwarf galaxies*. Faculty co-supervisor: Christoph Weniger.

Fabian Zimmer September 2021-Present
PhD student, University of Amsterdam. I am co-supervising his project, *Local Neutrino Clustering*, with faculty supervisor, Shinichiro Ando.

Athythia Aravinthan July 2021-Present
Master student, University of Amsterdam. I am the main supervisor of her project, *Evolution of satellite galaxies under gravothermal core-collapse*. Co-supervisor: Shinichiro Ando.

Past students

Florencia Collacchioni March 2019-July 2020
PhD student from La Plata National University, Argentina. Research Topic: *Metallicity gradient as tracer of recent gas accretion*. Faculty supervisors: Sofia Cora, Claudia Lagos. Graduated: March 2021.

Androniki Dimitriou Sept 2020-Aug 2021
Master student, University of Amsterdam. Thesis: *Reconstructing the halo spatial distribution and halo mass function using Neural Networks*. Co-supervisor: Christoph Weniger.

Julius Hendrix & Willem Kroese Feb-Aug 2019
Bachelor students, Leiden University. Joint Thesis: *Red sequence to Blue cloud galaxies in EAGLE*. Co-supervisor: Joop Schaye.

Eva van Weenen Sept 2018-Aug 2019
Master student, Leiden University, in the joint program Astronomy-Data Science. Thesis: *Machine learning with the EAGLE simulation*. Co-supervisor: Joop Schaye.

Malavika Vasist Sept 2017-Aug 2018
Master student, Leiden University. Thesis: *The impact of mergers on galaxy properties in the EAGLE simulations*. Co-supervisor: Joop Schaye.

Vijayan P. Aswin Sept 2016-Aug 2017
Master student, Leiden University. Thesis: *Analysing the impact of environment on the concentration of dark matter halos*. Co-supervisor: Joop Schaye.

RESEARCH TALKS	International conference. EAS2021 Symposium, Leiden	June 2021
	Colloquium at University of Nottingham (Virtual), UK	November 2020
	Colloquium at University of Durham (Virtual), ICC, UK	July 2020
	International conference. Invited speaker, EAS2020 Symposium, Leiden	June 2020
	Colloquium at University of Amsterdam, GRAPPA Institute, Netherlands	June 2020
	International conference. 2nd Australia-ESO Joint Conference, Australia	Feb 2020
	International conference. Invited speaker, CGM Berlin meeting, Germany	Sept 2019
	Colloquium, invited speaker at DIPC, San Sebastian, Spain	April 2019
	International conference. Virgo Meeting, The Netherlands	Dec 2018
	International conference. Virgo Meeting, Germany	Dec 2017
	International conference. The circle of life. South Africa	July 2017
	Colloquium, invited speaker at Swinburne University, Australia	April 2017
	Colloquium, invited speaker at the University of Melbourne, Australia	April 2017
	LEADERSHIP EXPERIENCE	GRAPPA equity, inclusion and diversity committee
Organising talks and open discussions on topics of gender equality and inclusion		
Scientific organizing committee Chair of Symposia: Stellar & Gas Kinematics in Galaxies, European Astronomical Society Annual Meeting		2019-2020
Scientific organizing committee Virgo meeting		Jan 2020
Doctorate committee Leiden University		Oct-Dec 2017
Member of the Doctore committe to evaluate the PhD Thesis of Bart Clauwens.		
Student Representative ANITA		2013-2016
Australian National Institute for Theoretical Astrophysics (ANITA) is a cooperative organization that has a fundamental role in the promotion of theoretical astrophysics.		
TEACHING EXPERIENCE	Thermal and Classical Physics University of Melbourne (Australia)	2013-2015
	Teacher assistant for second year undergraduate students	
	Classical Physics University of La Plata (Argentina)	2010-2011
	Teacher assistant for first year master students	
	Algebra University of La Plata (Argentina)	2010-2011
	Teacher assistant for first year undergraduate students	
	Calculus University of La Plata (Argentina)	2009-2011
Teacher assistant for first year undergraduate students		
SKILLS	Programming languages : Python, IDL, Fortran, C	
	Codes : Gadget, SubFind, SWIFT	
	Languages : English (fluent), Spanish (native), Dutch (basic, level A2)	
Outreach	60 in Real Time. Live interview about physics and cosmology, Amsterdam	Oct 2020
	Discovery Club program, Nijmegen & The Hague, NL	Jun-Sept 2018
	Astronomy classes to children 5-12 years old in refugee centres	
	Tutoring Cosmology Laboratory. Melbourne, Australia	2012-2013
Teaching introduction to cosmology to high-school students		
Miscellaneous	Organiser of the short scientific talk series at Leiden Obervatory	2016-2017
	Reviewer, Monthly Notices of the Royal Astronomical Society Journal	2016-present