

CAMILA CORREA

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RESEARCH INTEREST

Understanding the nature of the dark matter particle and its signature on the galaxy formation process. As an independent researcher, I am developing physically-motivated models of the rate of dark matter particles' interactions, and including them in new cosmological simulations to investigate the impact of self-interacting dark matter on galaxies colliding. I am also an active member of the EAGLE-2 collaboration, currently designing and testing state-of-the-art algorithms to produce the next generation of cosmological simulations of galaxy formation.

WORK EXPERIENCE

VENI fellow, University of Amsterdam **Nov 2019 - Oct 2022**
Currently working with the theoretical physics group GRAPPA
Postdoctoral Researcher, Leiden University **March 2016 - Oct 2019**
I worked in the research group of Prof. Joop Schaye, developing cosmological simulations of galaxy formation and studying galaxies morphological evolution

EDUCATION

PhD in Physics, University of Melbourne, Australia 21 Jun 2016
Thesis: The accretion history of dark matter halos
Advisors: Prof. Stuart Wyithe & Dr. Alan R. Duffy
Master in Astronomy, University of La Plata, Argentina 11 Nov 2011
Thesis: Thermodynamics of Regular Black Holes Interiors
Advisor: Prof. Gustavo E. Romero

REFEREED PUBLICATIONS

I have 10 first author publications out of 14 articles in total, with a combined citation count of 363 (305 as first author); h-index of 9 and g-index of 11. The impact factor of the Monthly Notices of the Royal Astronomical Society Journal (MNRAS) is 4.69. Below a list of key publications.

Correa, C. A.. Submitted to MNRAS. *Constraining Velocity-dependent Self-Interacting Dark Matter with the Milky Ways dwarf spheroidal galaxies.*

Correa, C. A. & Schaye, J. Submitted to MNRAS. *The dependence of the galaxy stellar-to-halo mass relation on galaxy morphology.*

Correa, C. A., Schaye J., Wyithe J. S. B., Duffy A. R., Theuns T., Crain R. A., Bower R. G. (2018). MNRAS, 473, 538. *The formation of hot gaseous haloes around galaxies.* Citations: 27.

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: 33.

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: 112.

Correa, C.A.; Wyithe, J.S.B.; Schaye, J.; Duffy, A.R. (2015b) MNRAS, 450, 1521. *The accretion history of dark matter haloes - II. The connections with the mass power spectrum and the density profile.* Citations: 52.

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: 60.

STUDENT SUPERVISION	Florencia Collacchioni (PhD student) March 2019-Present PhD student from La Plata National University, Argentina. Topic: Metallicity gradient as tracer of recent gas accretion. (Main supervisors: Sofia Cora, Claudia Lagos). Expected graduation: March 2021.
	Julius Hendrix & Willem Kroese (Bachelor students) Feb-Aug 2019 Bachelor students from Leiden University. Thesis: <i>Red sequence to Blue cloud galaxies in EAGLE</i> . Co-supervisor: Joop Schaye.
	Eva van Weenen (Master student) Sept 2018-Aug 2019 Master student from Leiden University in the joint program Astronomy-Data Science. Thesis: <i>Machine learning with the EAGLE simulation</i> . Co-supervisor: Joop Schaye.
	Malavika Vasist (Master student) Sept 2017-Aug 2018 Master student from Leiden University. Thesis: <i>The impact of mergers on galaxy properties in the EAGLE simulations</i> . Co-supervisor: Joop Schaye.
	Vijayan P. Aswin (Master student) Sept 2016-Aug 2017 Master student from Leiden University. Thesis: <i>Analysing the impact of environment on the concentration of dark matter halos</i> . Co-supervisor: Joop Schaye.
AWARDS & GRANTS	PRACE Network 50M core-CPU hours, Colibre collaboration (J. Schaye PI) 2019
	HPC-Europa3 Research grant: 120k core-CPU hours + EUR\$3k. 2019
	NWO-VENI Fellowship Research grant: EUR\$250k granted by NWO, 2019 Dutch research council
	The John Hodgson Scholarship Research grant: AU\$3k 2013
	Australian Astronomical Observatory Fund Travel grant 2013
	Research fellowship AU\$27k (p.a.) Granted by Prof. Wyithe 2012-2016 Australian Research Council Laureate Fellowship
	Research fellowship ARG\$3k (p.a.) Granted by the Faculty of 2008-2011 Astronomy, University of La Plata, Argentina
RESEARCH TALKS	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
	Eagle Meeting Durham, UK Dec 2016
	NOVA Galaxies and Cosmology meeting, The Netherlands Oct 2016
	International conference. The fate of gas flows in galaxies. Italy Sept 2016
	Astronomical Society of Australia, Annual Meeting, Perth, Australia June 2015
	ASA, Annual Meeting, Sydney, Australia July 2014
	Melbourne Area CAASTRO meeting, Swinburne University, Australia July 2014
	8th ANITA workshop, University of Sydney, Australia Feb 2014
International conference. Feeding, Feedback and Fireworks, Australia July 2013	
7th ANITA workshop, University of Queensland Feb 2013	
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
	Basic Calculus University of La Plata (Argentina) 2009-2011 Teacher assistant for first year undergraduate students
LEADERSHIP EXPERIENCE	Scientific organizing committee Virgo meeting Jan 2020

	Scientific organizing committee Organiser of Symposia: Stellar & Gas 2019-2020 Kinematics in Galaxies, European Astronomical Society Annual Meeting	
	Doctorate committee Bart Clauwens' PhD. Thesis, Leiden University	Oct-Dec 2017
	Student Representative Australian National Institute for Theoretical Astrophysics (ANITA)	2013-2016
	Scientific organizing committee ANITA workshop and astroinformatics summer school	2015
SKILLS	Programming languages : Python, IDL, Fortran, C Codes : Gadget, SubFind, SWIFT Languages : English (fluent), Spanish (native), Dutch (basic, level A2)	
Outreach	Discovery Club program, Leiden University I gave astronomy classes to children 5-12 years old in refugee centres in Nijmegen and The Hague (Netherlands). Tutoring Cosmology Laboratory to high-school students	Jun-Sept 2018 2012-2013
Miscellaneous	Organiser of the short scientific talk series at Leiden Observatory Reviewer, Monthly Notices of the Royal Astronomical Society Journal	2016-2017 2016-present