CAMILA CORREA

Institute of Physics, University of Amsterdam, Office C4.169
Science Park 904, 1098GE Amsterdam, The Netherlands
Email : camila.correa@uva.nl
Website : www.camilacorrea.com
Github : https://github.com/correac

RESEARCH INTEREST

My research interest lies in understanding the nature of the dark matter particle and its signature on the galaxy formation process. I have been designing state-of-the-art algorithms to produce the next generation of cosmological simulations of galaxy formation as member of the COLIBRE collaboration (PI Prof. Joop Schaye, PI Prof. Carlos Frenk). In an independent proyect I am developing physically-motivated models of the rate of dark matter particles' interactions, and including them in the new cosmological simulations to investigate the impact of self-interacting dark matter on galaxies colliding.

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**
Working 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 8 first author refereed publications out of 12 articles in total, with a combined citation count of 291 (249 as first author); h-index of 7 and g-index of 10. 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.; Schaye, J.; and Trayford, J. W. (2019). MNRAS, 484, 4, 4401. *The origin of the red sequence galaxy population in the EAGLE simulation.* Citations: 6.

Correa, C. A.; Schaye, J.; van de Voort F.; Duffy A. R. and Wyithe J. S. B. (2018). MNRAS, 478, 225. *The impact of feedback and the hot halo on the rates of gas accretion onto galaxies.* Citations: 7.

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: 17.

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: 25.

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: 100.

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: 43.

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: 51.

STUDENT SUPERVISION

Florencia Collacchioni (PhD student) March 2019-Present
PhD student from La Plata National University, Argentina. I started supervising the student's project since her visit at Leiden Observatory (March-June 2019).

Julius Hendrix & Willem Kroese (Bachelor students) Feb-Aug 2019
Bachelor students from Leiden University. Thesis: *Red sequence to Blue cloud galaxies in EAGLE*. 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: *Machine learning with the EAGLE simulation*. Co-supervisor: Joop Schaye.

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

Vijayan P. Aswin (Master student) Sept 2016-Aug 2017
Master student from Leiden University. Thesis: *Analysing the impact of environment on the concentration of dark matter halos*. 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 + 3k. 2019
NWO-VENI Fellowship Research grant: 250k granted by NWO, Nederlandse Organisatie voor Wetenschappelijk Onderzoek 2019
The John Hodgson Scholarship Research grant: 3k 2013
Australian Astronomical Observatory Fund Travel grant 2013
Research fellowship AU$27k (p.a.) Granted by Prof. Wyithe Australian Research Council Laureate Fellowship 2012-2016
Research fellowship ARG$3k (p.a.) Granted by the Faculty of Astronomy, University of La Plata, Argentina 2008-2011

RESEARCH TALKS

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 Chair of Symposia: Stellar & Gas Kinematics in Galaxies, European Astronomical Society Annual Meeting 2019-2020

Doctorate committee Oct-Dec 2017
Bart Clauwens' PhD. Thesis, Leiden University

Student Representative 2013-2016

	Australian National Institute for Theoretical Astrophysics (ANITA) **Scientific organizing committee** ANITA workshop and astroinformatics summer school	2015
SKILLS	**Programming languages :** Python, IDL, Fortran, C **Codes :** Gadget, SubFind, SWIFT **General :** HTML, CSS **Languages :** English (fluent), Spanish (native), Dutch (basic, level A2)	
Outreach	Discovery Club program, Leiden University Tutoring Cosmology Laboratory to high-school students	2018 2012-2013
Miscellaneous	Organiser of the short scientific talk series at Leiden Obervatory Reviewer, Monthly Notices of the Royal Astronomical Society Journal	2016-2017 2016-present