

Jorge Cuadra

Research keywords: Theoretical Astrophysics – Proto-planetary Discs
Galactic Centre – Massive Black Hole Binaries

Universidad Adolfo Ibáñez
Av. Padre Hurtado 750
Viña del Mar, Chile
jrcuadra.github.io/plaga/
jorge.cuadra@uai.cl

ACADEMIC POSITIONS

Univ. Adolfo Ibáñez (UAI), Viña del Mar — Full Professor

March 2020 - present

Departamento de Ciencias, Facultad de Artes Liberales

P. Univ. Católica de Chile (PUC), Santiago — Assoc. Professor

July 2010 - Feb 2020

Director of Astrophysics Undergraduate Programme (2018–20)
Sabbatical at the Max Planck Institute for Extraterrestrial Physics (2017)
Director for Research of Institute for Astrophysics (2016)
Academic Secretary of Faculty of Physics (2014–16)

Max-Planck Institute for Astrophysics, Garching, Germany; Shanghai Astronomical Observatory, China — Joint Postdoctoral Position

Sept 2008 - July 2010

University of Colorado, Boulder, US — Postdoc. Researcher

Oct 2006 - Sept 2008

EDUCATION

Ludwig-Maximilians-Universität, München, Germany — PhD in Astronomy

Oct 2006

Thesis at the Max-Planck Institute for Astrophysics

PUC — Licenciatura en Astronomía

Dec 2001

Also, Graduate Courses on Physics and Astronomy, 2001–2002, and
Courses on Engineering and Computer Science, 1996–2000

OUTREACH

- Development of video game and VR apps from simulations
- Talks for general public and lectures for high school teachers
- Astronomy articles for Emol, Qué Pasa and RAL
- Interviews for TV, radio, online, and written media

RESEARCH OUTPUT

79 WoS Q1 refereed articles
with 4650+ citations, $h=31$
orcid.org/0000-0003-1965-3346
arxiv.org/a/cuadra_j_1.html

40+ colloquia and invited
seminars

60+ oral presentations at
conferences, 12 invited

SELECTED GRANTS

FONDECYT PI Regulares
(2021–2025, 2014–2018) &
Iniciación (2010–2013)

Núcleos Milenio on
Supermassive Black Holes
(2024–27), Planet Formation
(2017–23; deputy PI 2022–23)
and Protoplanetary Discs
(2014–17)

Director of Max Planck
Partner Group on Galactic
Centre, associated to MPE
(2016–21)

PI of several grants from
ANID, ESO-Chile, PUC & UAI

MENTORING

- 12 postdoctoral researchers,
including 6 FONDECYT
- Theses: 4 PhD, 4 MSc, 6 BSc
- 15+ summer and part-time
research students

SELECTED PUBLICATIONS FROM LAST FIVE YEARS

Underlined names correspond to supervised students or postdocs

1. Fontecilla, Camilo, Haiman, Zoltán, & Cuadra, Jorge: "Non-steady-state long-term evolution of supermassive black hole binaries surrounded by accretion discs", Monthly Notices of the Royal Astronomical Society, Volume 482, Issue 4, p.4383-4396, <http://doi.org/10.1093/mnras/sty2972> (2019)
2. Poblete, Pedro P., Cuello, Nicolás, & Cuadra, Jorge: "Dusty clumps in circumbinary discs", Monthly Notices of the Royal Astronomical Society, Volume 489, Issue 2, p.2204-2215, <http://doi.org/10.1093/mnras/stz2297> (2019)
3. Calderón, Diego, Cuadra, Jorge, Schartmann, Marc, et al.: "Stellar Winds Pump the Heart of the Milky Way", The Astrophysical Journal Letters, Volume 888, Issue 1, article id. L2, 5 pp., <http://doi.org/10.3847/2041-8213/ab5e81> (2020)
4. Calderón, D., Cuadra, J., Schartmann, M., et al.: "Three-dimensional simulations of clump formation in stellar wind collisions", Monthly Notices of the Royal Astronomical Society, Volume 493, Issue 1, p.447-467, <http://doi.org/10.1093/mnras/staa090> (2020)
5. Gárate, M., Cuadra, J., Montesinos, M., et al.: "Feedback-limited accretion: variable luminosity from growing planets", Monthly Notices of the Royal Astronomical Society, Volume 501, Issue 3, pp.3113-3121, <http://doi.org/10.1093/mnras/staa3860> (2021)
6. Ronco, María Paula, Guilera, Octavio M., Cuadra, Jorge, et al.: "Long Live the Disk: Lifetimes of Protoplanetary Disks in Hierarchical Triple-star Systems and a Possible Explanation for HD 98800 B", The Astrophysical Journal, Volume 916, Issue 2, id.113, 16 pp., <http://doi.org/10.3847/1538-4357/ac0438> (2021)
7. Scherer, Andrés, Cuadra, Jorge, & Bauer, Franz E.: "Galactic center gamma-ray production by cosmic rays from stellar winds and Sgr A East", Astronomy & Astrophysics, Volume 659, id.A105, 8 pp., <http://doi.org/10.1051/0004-6361/202142401> (2022)
8. Gormaz-Matamala, A. C., Cuadra, J., Meynet, G., et al.: "Evolution of rotating massive stars with new hydrodynamic wind models", Astronomy & Astrophysics, Volume 673, id.A109, 18 pp., <http://doi.org/10.1051/0004-6361/202345847> (2023)
9. Scherer, Andrés, Cuadra, Jorge, & Bauer, Franz E.: "Modeling the Galactic center gamma-ray emission with more realistic cosmic-ray dynamics", Astronomy & Astrophysics, Volume 679, id.A114, 15 pp., <http://doi.org/10.1051/0004-6361/202245822> (2023)
10. Cuadra, Jorge: "The asymmetric sunrise effect on Thales' alleged measurement of the Sun angular size", Publications of the Astronomical Society of Japan, Volume 75, Issue 3, pp.L12-L17, <http://doi.org/10.1093/pasj/psado26> (2023)

FULL LIST OF ANID GRANTS FROM LAST FIVE YEARS

FONDECYT "Multi-phase Hydrodynamics in the Galactic Centre" / PI / 2021-25

Millennium Nucleus for Planet Formation / Main Researcher and Deputy Director / 2017-23

Millennium Nucleus on Transversal Research and Technology to Explore Supermassive Black Holes / Main Researcher / 2024-27

ANID-ALMA project "Protoplanetary discs with luminous companions" / PI / 2023-25

FONDECYT "The Astrophysical Impact of Radiation-Driven Stellar Winds on Protoplanetary and Circumplanetary Disk Evolution" / Co-I / 2024-28

FONDECYT "The Inner Parsec of the Galactic Center" / Sponsor / 2017-20

FONDECYT "Dust Evolution in Protoplanetary Disks With Complex Morphologies" / Sponsor / 2017-20

FONDECYT "Planet Formation in Binary Systems: Linking Different Formation Stages" / Sponsor / 2019-21

FONDECYT "The Missing Rings: Forming and Discovering Rings and Moons Around Exo-planets" / Sponsor / 2023-24

FONDECYT "Exploring Intermediate-mass Black Holes in Triple Systems with Gravitational Waves" / Sponsor / 2024-27

FULL LIST OF UAI GRANTS FROM LAST FIVE YEARS

Fondo para reparación y mantención de equipos investigación (2020,21)

Postdoctoral project "Evolution of massive stars with self-consistent hydrodynamic models" (2021)