

Curriculum Vitae – Jesús Zavala Franco

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Research Interests

Dark matter physics, particle dark matter searches, the formation and evolution of dark matter halos and galaxies (theory and numerical simulations)

Publications

25 papers published in international peer-reviewed journals (*14/9 as a first/second author*) and 8 conference proceedings with a total of 700 citations as of 09/2014 (*~60% over the last 2 years and >60/90% as first/second author*); hirsch index $h=13$ (13 articles with more than 13 citations).

[Link to list of publications in ADS.](#)

Professional Appointments

- 11/13 – Present **Marie Curie Fellow** (03/14 – Present) **Independent DARK Fellow** (11/13 – 03/14)
DARK Cosmology Centre, Niels Bohr Institute, University of Copenhagen, Denmark
- 10/10 – 11/13 Joint Postdoctoral Fellow (10/12 – 11/13), Waterloo, Canada
Canadian Institute for Theoretical Astrophysics National Fellow (10/12 – 11/13)
Perimeter Institute for Theoretical Physics
Department of Physics and Astronomy, University of Waterloo
- 09/07 – 10/10 Joint Postdoctoral Researcher, MPA/SHAO Joint Center for Astrophysical Cosmology
Max Planck Institute for Astrophysics (09/08 – 10/10), Garching, Germany
Shanghai Astronomical Observatory (09/07 – 09/08), Shanghai, China

Education

- 06/05 – 08/07 **Ph.D., Physics**
Nuclear Sciences Institute (ICN), National Autonomous University of Mexico (UNAM)
Advisor: Prof. Darío Núñez Zúñiga
- 08/03 – 06/05 **M.Sc., Physics** (Total average grade: 9.8 out of 10)
ICN, UNAM
- 08/97 – 06/03 **B.Sc., Physics** (Total average grade: 9.5 out of 10, **graduated with honors**)
Faculty of Sciences, UNAM
Advisor: Prof. Vladimir Avila Reese, Astronomy Institute, UNAM

Awards, Honors and Grants

- 2014 – 2016 **Marie Curie Incoming International Fellowship**, European Union
- 2013 – 2016 DARK Independent Fellowship, Danish National Research Foundation
- 2010 – 2012 **CITA National Fellowship**, Canadian Institute for Theoretical Astrophysics
- 2009 Elected as a member of the Mexican National Researchers System (level I)
- 2007 – 2008 Chinese Academy of Sciences Research Fellowship for International Young Researchers

- 2006 – 2007 European Union LENAC/ALFA project assistance grant (~€8,000 total):
ICC, Durham, England (03/07 – 04/07), MPA, Garching, Germany (02/06 – 06/06)
- 2003 – 2007 Graduate student scholarship (~ €26,200), Mexican Government (CONACyT)
- 2003 – 2007 Complementary graduate student scholarships (~ €4,500), DGEP and PAEP, UNAM
- 2002 Scholarship “PROBETEL” for undergraduate thesis work (~ €800), UNAM

Teaching and mentoring experience

- 04/14 – Present Supervisor of a MSc student (Thejs Ehlert Brinckmann), Dark Cosmology Centre
- 01/14 – 06/14 Supervisor of a BSc student (Jose M. Chimero), Dark Cosmology Centre
- March 2014 Lecturer in a gravitational dynamics course (undergraduate), Dark Cosmology Centre
- 09/12 – 12/12 Lecturer of an advanced course in Dark Matter (graduate, [link to lecture notes](#))
Department of Physics and Astronomy, University of Waterloo
- 05/11 – 08/11 Co-supervisor of a last-term undergraduate student (Stephen Ro)
Department of Physics and Astronomy, University of Waterloo
- 08/06 – 12/06 Teacher of elementary algebra, sets and number theory (undergraduate)
Mexico Autonomous Institute of Technology (ITAM)
- 10/05 – 01/06 Supervisor of a mid-term undergraduate student, ICN, UNAM
- 08/05 – 12/05 Teaching assistant of Classical Mechanics (graduate), Physics Institute, UNAM
- 01/05 – 06/05 Teacher of Classical Mechanics (undergraduate), Faculty of Sciences, UNAM

Seminars, Colloquia and Conference talks

Since 2009 I have given over 50 talks (40 invited), half of which have occurred over the last 2 years.
The following is a list of selected contributions (the slides for some of them can be found in [this link](#)).

Selected seminars & colloquia (invited)

- 09/14 Seminar, Center for Cosmology and Particle Physics Phenomenology, Odense, Denmark
- 04/14 Institute Colloquium, Mitchell Institute, Texas A&M University, USA
- 02/14 Seminar, KIPAC, Stanford University, USA
- 02/14 Colloquium, Department of Physics, UCSC, Santa Cruz, USA
- 02/14 Seminar, Leiden Observatory, The Netherlands
- 02/13 Institute seminar, Center for Cosmology and AstroParticle Physics, Columbus, USA
- 02/13 Seminar, NORDITA, Stockholm, Sweden
- 01/13 Seminar, Dark Cosmology Centre, Copenhagen, Denmark
- 06/12 Seminar, Institute for Computational Cosmology, Durham, UK
- 04/12 Colloquium, Astronomy Institute, Mexico City, Mexico
- 02/12 Colloquium, Physics Department, Queen’s University, Kingston, Canada
- 11/11 Joint Harvard/MIT/Tufts Cosmology Colloquium,
Harvard-Smithsonian Center for Astrophysics (CfA), Cambridge, USA
- 05/11 Cosmology Seminar, Perimeter Institute, Waterloo, Canada
- 03/11 Seminar, Canadian Institute for Theoretical Astrophysics, Toronto, Canada
- 01/11 Seminar, University of Waterloo, Waterloo, Canada
- 01/09 Colloquium, Max Planck Institute for Astrophysics, Garching, Germany

Selected Conference and Workshop talks (invited)

09/14	Review Lecture , Dark Matter Numerical Simulations, IPhT CEA/Saclay, France
08/14	Interplay of Particle and Astroparticle Physics Workshop, QMUL, London, UK
07/14	Dark Matter Symposium, EuropeanWeek of Astronomy and Space Science (EWASS) Geneva, Switzerland
02/14	11th Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, UCLA, Los Angeles, California
08/13	Self-interacting dark matter and challenges to LCDM cosmology, Harvard, USA
07/13	Dwarf Galaxies Workshop, Copenhagen, Denmark
06/13	Cosmic-Rays and Photons from Dark Matter Annihilation: Theoretical Issues Mainz, Germany
12/12	Plenary talk , IX Mexican School on Gravitation and Mathematical Physics, Cosmology for the XXI Century: Inflation, Dark Matter and Dark Energy, Puerto Vallarta, Mexico
06/12	CIAS Meudon 2012, Warm dark matter galaxy formation in agreement with observations, CIAS Observatoire de Paris, Meudon, France
05/12	Dark Matter Signatures in the Gamma Ray Sky Workshop, Texas Cosmology Center, Austin, USA
11/09	LAUNCH 09: Neutrinos and Beyond, Heidelberg, Germany

Miscellaneous

- Referee for the journals: Physical Review Letters, Monthly Notices of the Royal Astronomical Society, Physical Review D and The Astronomical Journal
- Member of the European Astronomical Society
- Co-organizer of the workshop “Unravelling Dark Matter”, Perimeter Institute for Theoretical Physics, Waterloo, Canada
- Computer skills: Familiarity with C and FORTRAN programming languages. Extensive experience with data visualization and programming software: IDL, Python and Maple. Familiarity with the numerical codes: GADGET and FLASH for cosmological N-body and hydrodynamical simulations.
- Languages: Spanish (mother tongue) and English (proficient)

Primary References

Prof. Niayesh Afshordi (Associate Faculty)
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Additional References

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