

# Curriculum Vitae

## Pavel E. Mancera Piña

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🌐 <https://pavel-mancera-pina.github.io/>

### Postdoctoral experience








- 2023 → 📖 **NWO VENI Fellow**, Leiden Observatory  
2022–2023 📖 **Postdoc** at Mariska Kriek's group at Leiden Observatory

### Education

- 2018 – 2022 📖 **PhD (Astrophysics, cum laude)**, University of Groningen (Kapteyn Astronomical Institute)  
Thesis title: *Dark matter and angular momentum in nearby disc galaxies*  
Advisors: F. Fraternali, T. A. Oosterloo, and E. A. K. Adams  
Assessment committee: J. J. Binney, J. M. van der Hulst, K. Spekkens
- 2016 – 2018 📖 **MSc. in Astronomy**, University of Groningen (Kapteyn Astronomical Institute)  
Thesis title: *The evolution of ultra-diffuse galaxies in nearby galaxy clusters*  
Advisor: R. Peletier
- 2012 – 2016 📖 **BSc in Physics**, School of Physics, Universidad Veracruzana  
Thesis title: *The globular cluster NGC 6229 seen from its variable stars*  
Advisor: A. Arellano Ferro

### Publications as first author

ADS library with my [publications as first author](#). ORCID profile: . Around 515 citations (April/2025).

- 1 P. E. Mancera Piña et al., “The galaxy-halo connection over six orders of magnitude in stellar mass,” *submitted to A&A*, 2025.
- 2 P. E. Mancera Piña, G. Golini, I. Trujillo, *et al.*, “Exploring the nature of dark matter with the extreme galaxy AGC 114905,” *A&A*, vol. 689, A344, A344, Sep. 2024.  DOI: 10.1051/0004-6361/202450230.
- 3 P. E. Mancera Piña, F. Fraternali, T. Oosterloo, *et al.*, “No need for dark matter: resolved kinematics of the ultra-diffuse galaxy AGC 114905,” *MNRAS*, vol. 512, no. 3, pp. 3230–3242, May 2022.  DOI: 10.1093/mnras/stab3491.
- 4 P. E. Mancera Piña, F. Fraternali, T. Oosterloo, *et al.*, “The impact of gas disc flaring on rotation curve decomposition and revisiting baryonic and dark matter relations for nearby galaxies,” *MNRAS*, vol. 514, no. 3, pp. 3329–3348, Aug. 2022.  DOI: 10.1093/mnras/stac1508.
- 5 P. E. Mancera Piña, L. Posti, F. Fraternali, *et al.*, “The baryonic specific angular momentum of disc galaxies,” *A&A*, vol. 647, A76, A76, Mar. 2021.  DOI: 10.1051/0004-6361/202039340.
- 6 P. E. Mancera Piña, L. Posti, G. Pezzulli, *et al.*, “A tight angular-momentum plane for disc galaxies,” *A&A*, vol. 651, L15, p. L15, Jul. 2021.  DOI: 10.1051/0004-6361/202141574.
- 7 P. E. Mancera Piña, F. Fraternali, K. A. Oman, *et al.*, “Robust H I kinematics of gas-rich ultra-diffuse galaxies: hints of a weak-feedback formation scenario,” *MNRAS*, vol. 495, no. 4, pp. 3636–3655, Jul. 2020.  DOI: 10.1093/mnras/staa1256.
- 8 P. E. Mancera Piña, J. A. L. Aguerri, R. F. Peletier, *et al.*, “The evolution of ultra-diffuse galaxies in nearby galaxy clusters from the Kapteyn IAC WEAVE INT Clusters Survey,” *MNRAS*, vol. 485, no. 1, pp. 1036–1052, May 2019.  DOI: 10.1093/mnras/stz238.

- 9 P. E. Mancera Piña, F. Fraternali, E. A. K. Adams, *et al.*, “Off the Baryonic Tully-Fisher Relation: A Population of Baryon-dominated Ultra-diffuse Galaxies,” *ApJ*, vol. 883, no. 2, L33, p. L33, Oct. 2019. [DOI: 10.3847/2041-8213/ab40c7](https://doi.org/10.3847/2041-8213/ab40c7).
- 10 P. E. Mancera Piña, R. F. Peletier, J. A. L. Aguerri, *et al.*, “Reviewing the frequency and central depletion of ultra-diffuse galaxies in galaxy clusters from the KIWICS survey,” *MNRAS*, vol. 481, no. 4, pp. 4381–4388, Dec. 2018. [DOI: 10.1093/mnras/sty2574](https://doi.org/10.1093/mnras/sty2574).

## Publications as second author

Twenty-five publications (three second-author [including Geesink et al. 2024, led by my MSc student], two third-author). ADS library with my [publications as co-author](#). Around 280 citations (April/2025).

## Awards and Achievements

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|-----------|--|
| 2023      | <ul style="list-style-type: none"> <li>■ <b>IAC Early-Career Visitor Fellowship</b>, by the Instituto Astrofísico de Canarias (IAC). Fellowship for a 2-month visit to the IAC.</li> <li>■ <b>VENI Fellowship</b>, by NWO, the Dutch Research Council. 3-year fellowship to carry out an independent research program.</li> </ul>  |
| 2022      | <ul style="list-style-type: none"> <li>■ <b>Van Swinderen PhD Thesis Prizes</b>, by the Royal Society for Natural Sciences. Awards (one public and one from the jury) given by the KNG (Koninklijk Natuurkundig Genootschap) to the best cum laude PhD thesis in the faculties of Science and Engineering and Medical Sciences at the University of Groningen.</li> </ul>  |
| 2018–2022 | <ul style="list-style-type: none"> <li>■ <b>NOVA Fellowship</b>, by the Netherlands Research School for Astronomy (NOVA) and the Netherlands Institute for Radio Astronomy (ASTRON). Fully-funded PhD program.</li> </ul>  |
| 2019      | <ul style="list-style-type: none"> <li>■ <b>Mexican National Award for the Best MSc Thesis in Astronomy</b>, by the National Congress of Astronomy and the National Congress of Physics of Mexico. Award for the best MSc thesis in Astronomy in Mexico/by a Mexican. Won for the 2017–2018 period.</li> </ul>   |
| 2017      | <ul style="list-style-type: none"> <li>■ <b>Mexican National Award for the Best BSc Thesis in Astronomy</b>, by the National Congress of Astronomy and the National Congress of Physics of Mexico. Award for the best BSc thesis in Astronomy in Mexico/by a Mexican. Won for the 2015–2016 period, for my thesis.</li> </ul>  |
| 2016      | <ul style="list-style-type: none"> <li>■ <b>Holland Scholarship</b>, by the Dutch Ministry of Education, Culture and Science. Scholarship awarded to outstanding international students for a Master’s degree in the Netherlands.</li> </ul>   |
| 2016–2018 | <ul style="list-style-type: none"> <li>■ <b>NOVA MSc Fellowship</b>, by NOVA. Fellowship for excellent international students pursuing a Master’s degree in Astronomy in the Netherlands.</li> <li>■ <b>Conacyt Scholarship</b>, by Conacyt, the Mexican National Council for Science and Technology. Scholarship to study for a Master’s degree at the University of Groningen.</li> </ul>  |
| 2015      | <ul style="list-style-type: none"> <li>■ <b>Summer Research Program Scholarship</b>, by the Mexican Academy of Sciences. Scholarship (Verano de la investigación científica) for an 8-week summer research stay at the National Observatory of San Pedro Mártir.</li> <li>■ <b>Award to Academic Performance</b>, by the University of Veracruz. Award for outstanding students with remarkable participation in congresses or conferences.</li> </ul> |
| 2014      | <ul style="list-style-type: none"> <li>■ <b>Mobility Scholarship</b>, by the University of Veracruz. An Erasmus-like scholarship for a one-year exchange at the National University of Mexico.</li> </ul>  |

## Talks

### Invited (selected)







- 2025  **Conference ‘10 Years of Ultra-Diffuse Galaxies: Past Perspectives and Future Prospects’**, Benasque, Spain.
-  **Workshop ‘Galactic discs and gravitational instabilities’**, Marstrand, Sweden.
- 2024  **IAU GA session ‘Neutral hydrogen in and around galaxies in the SKA era’**, Cape Town, South Africa.
-  **Colloquium**, FORTH Institute of Astrophysics, Crete, Greece.
-  **Lorentz Workshop ‘A new dawn of dwarf galaxy research’**, Leiden, the Netherlands.
- 2023  **Sexten Conference ‘The Sunrise of Ultra-diffuse Galaxies’**, Sesto, Italy.
- 2022  **Colloquium**, Leiden Observatory.
-  **Colloquium**, Astronomisches Rechen-Institut (ARI), Heidelberg University.
-  **Colloquium**, University of California, Riverside.
-  **Colloquium**, Netherlands Institute for Radio Astronomy (ASTRON).
-  **Colloquium**, Instituto de Astrofísica de Canarias (IAC).
- 2021  **Lunch talk**, Cosmic DAWN Center.
-  **Colloquium**, University of Oxford.
-  **Colloquium**, University College London.
-  **Colloquium**, University of Surrey.
-  **Colloquium**, Observatoire Astronomique de Strasbourg.
- 2020  **Colloquium**, Institute of Astrophysics of Andalusia.
-  **Lunch talk**, Astronomy Department, University of Durham.
-  **Lunch talk**, Van Swinderen Institute of Particle Physics and Gravity.
- 2019  **Lunch talk**, Kapteyn Astronomical Institute.
-  **Colloquium**, Institute of Astronomy, UNAM.

### Contributed (selected)






- 2023  **PHISCC 2023 - HI surveys in full swing**, Cape Town, South Africa.
- 2022  **A holistic view of stellar feedback and galaxy evolution**, Ascona, Switzerland.
-  **Netherlands Astronomers Conference (NAC)**, Duinse Polders, Belgium.
- 2021  **Royal Astronomical Society National Astronomy Meeting**, Session: Modelling the radio sky in the SKA pathfinder era, Bath (virtual), UK.
-  **Royal Astronomical Society National Astronomy Meeting**, Session: The unexplored low-surface-brightness Universe, Bath (virtual), UK.
- 2020  **European Astronomical Society Annual Meeting**, SS19: Crossing the characteristic mass scales in galaxy evolution, Leiden (virtual), the Netherlands.
-  **European Astronomical Society Annual Meeting**, S6: Stellar & gas kinematics in galaxies across cosmic time, connecting observations with theory, Leiden (virtual), the Netherlands.
- 2019  **KIAA Forum on Gas in Galaxies: Multiple-phase Interstellar Medium**, Beijing, China.
-  **MIAPP Workshop: Nine billion years of neutral gas evolution**, Garching, Germany.
-  **IAU Meeting: The Realm of the LSB Universe**, Tenerife, Spain.
- 2018  **Lorentz Workshop: The Bewildering Nature of Ultra-Diffuse Galaxies**, Leiden, the Netherlands.

## Supervision and teaching



### Supervision

- 2024  **Nikki Geesink**, MSc thesis: The angular momentum-mass relation of molecular gas in nearby galaxies, Leiden University.
- 2022  **Rosa de Graaff**, BSc thesis: A kinematical study of Malin 1 from its HI emission, University of Groningen (co-supervised with F. Fraternali and M. Verheijen).
- 2021  **Stijn Groeneveld**, BSc thesis: Comparing the surface density of ionised and molecular gas in low-redshift galaxies: A step towards mass modelling at higher redshifts, University of Groningen (co-supervised with F. Fraternali).
- 2020  **Ben Danzer**, BSc thesis: Kinematic modelling of high-redshift galaxies in 3D, University of Groningen (co-supervised with F. Fraternali).
-  **Nikki Potze**, BSc thesis: Modelling the dark matter halos of galaxies at  $z \sim 1$  through rotation curve decomposition, University of Groningen (co-supervised with F. Fraternali).
-  **Dennis Koopmans**, BSc thesis: Towards an automated way of deriving kinematics of galaxies, University of Groningen (co-supervised with F. Fraternali).

### Teaching Assistant

- 2020,2021  **Physics of Stars**, University of Groningen. Professor: Eline Tolstoy.
- 2021  **Observational Astronomy**, University of Groningen. Professor: Reynier Peletier.
- 2019  **Evolving Universe**, University of Groningen. Professor: Marc Verheijen.
- 2018  **Introduction to Astronomy**, University of Groningen. Professor: Rien van de Weygaert.
- 2017  **Computer-Aided Problem-Solving**, University of Groningen. Professor: Roel Luppens.

## Skills

- Languages  Spanish (native), English (fluent), Dutch (basic), Italian (basic), French (basic)
- Coding & tools  I have significant experience coding in Python. I am also familiar with different software for data visualisation such as DS9, TOPCAT, kvis. I am also a regular user of GALPYNAMICS (software to build disc and halo potentials), <sup>3D</sup>BAROLO (software to build 3D kinematic models of emission-line data cubes) and GIPSY (software to perform all kind of operations and tasks related to HI data cubes). I am familiar with robust statistical fitting tools such as MCMC routines, Nested Sampling, and the HyperFit package. I also have a good knowledge of  $\LaTeX$ .

## Observing proposals

I have been the PI of different successful observing proposals using optical and radio telescopes. These include (in the optical) the Isaac Newton Telescope (INT, 2.5-m,  $\sim 10$  h) and Gran Telescopio Canarias (GTC, 10.4-m,  $\sim 40$  h), and in the radio ALMA ( $\sim 10$  h), MeerKAT ( $\sim 160$  h), and the VLA ( $\sim 200$  h). I am particularly happy with a recently-granted Large Program using MeerKAT to image at high spatial resolution the kinematics of gas-rich ultra-diffuse galaxies. I am also involved in a couple of JWST programs (PI M. Kriek) studying massive galaxies at high-redshift.

## Community service

– Since  $\sim 2019$  I am a regular referee for Nature, The Astrophysical Journal (ApJ), Monthly Notices of the

Royal Astronomical Society (MNRAS), Nature Astronomy (NatAs), Astronomy & Astrophysics (A&A), and Astrophysics and Space Science.

– Since 2024, I am part of the Time Allocation Committee for the telescopes in the Observatorio del Roque de los Muchachos, in La Palma.

– I have served as a committee member for a PhD defence at the University of Groningen (A. Li, supervisor F. Fraternali) and at the Universidad de la Laguna (J. Romero-Gómez, supervisor J.A.L. Aguerri).

– Within my institutes, I have been part of different committees that organise talks by internal and external speakers, and I have helped organize NAC, the Dutch Astronomical Conference.

– I have significant experience in outreach, having been part of different outreach groups during the last 10 years.

## References

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**Prof. Filipo Fraternali**

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**Dr. Betsey Adams**

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