Daniele **Fasano**

Astronomer

daniele.fasano@oca.eu | DanieleFasano

Education

Observatoire de la Côte d'Azur

Nice, France
Heidelberg, Germany

Ph.D. in Astrophysics · *Scheduled defence date: Dec. 2025* — *Sept. 2022 - Present*

- Thesis title: Unveiling the early stages of planet formation through observations and models of planet-disc interactions
- Advisors: Myriam Benisty & Andrew Winter

Università degli Studi di Milano

Milan, Italy

M.S. in Astrophysics — *Sept. 2019 - April 2022*

- 110/110 cum Laude
- Thesis title: Testing the accuracy of semi-analytical models of planetary kinks in the non-linear regime

Università degli Studi di Milano

Milan, Italy

B.S. in Physics — *Sept. 2016 - Dec. 2019*

- 110/110 cum Laude
- Bachelor thesis title: Imaging of protostellar discs: the case of IRAS04158+2805

Accepted Observing Proposals

Cycle 11 ID: 2024.1.01019.S ALMA ***Project PI, Grade C.***
Cycle 10 ID: 2023.1.00766.S ALMA ***Project PI, Grade C.***
Cycle 10 ID: 2023.1.00692.S ALMA ***Project co-I, Grade B.***
Cycle 11 ID: 2024.1.00391.S ALMA ***Project co-I, Grade C.***
Cycle 11 ID: 2024.1.00624.S ALMA ***Project co-I, Grade C.***

Conferences - Schools

2025 **The Role Of Accretion And Ejection Variability In The Evolution Of Young Stars And Their Disks,** ESO *Garching, Germany* · *Contributed* ***talk***
2025 **Gas Accretion in Planet Formation,** MPIA *Heidelberg, Germany* · *Poster contribution*
2025 **exoALMA Wave 2 Workshop,** exoALMA *MPIA, Heidelberg, Germany* · ***LOC*** *member*
2024 **Physics of Star Formation: ISM dynamics and star formation: Linking (extra-)galactic scales to protoplanetary disks,** HHSF2024 *Heidelberg, Germany* · *Contributed* ***talk***
2024 **New Heights in Planet Formation,** ESO *Garching, Germany* · *Poster contribution*
2024 **ERC Workshop on Disk & Planet Formation,** *Villa Monastero, Varenna, Italy* · *Contributed* ***talk***
2023 **Milan Xmas Workshop 2023,** Unimi *Milan, Italy* · *Contributed* ***talk***
2023 **exoALMA EU Data Analysis Workshop,** exoALMA *OCA, Nice, France* · ***LOC*** *member*
2023 **Core2disk III Workshop,** Institut Pascal *Orsay, France*
2023 **Protostars and Planets VII,** Kyoto International Conference Center *Kyoto, Japan*
2022 **Disks and Planets across ESO Facilities** ESO *Garching, Germany* · *Contributed* ***talk***
2022 **exoALMA Start of Science Workshop,** exoALMA *Endicott House, Boston, USA*
2022 **Inside 2022 - The Inner Regions of Protoplanetary Discs,** MPIA *Castle Ringberg, Munich, Germany* · *Poster contribution*
2022 **Dustbusters School I,** Unimi *Gargnano del Garda, Italy*
2021 **Milan Xmas Workshop 2021,** Unimi *Milan, Italy* · *Contributed* ***talk***

Research Experience

PhD · *Group of Dr. Myriam Benisty, ERC Protoplanets* — *Nice, France · Heidelberg, Germany*

Observatoire de la Côte d'Azur/Max-Planck-Institut für Astronomie — *Sep. 2022 - Present*

- Studying interactions between planets and discs via gas kinematics and dust continuum emission with ALMA observations, analytical models and numerical simulations
- Analysing the output of `FARGO3D` numerical hydrodynamical simulation and modelling gas kinematics with the `discminer` package
- First publication on limitations of analytical models applied to observations
- Contributing to the kinematic analysis and pipeline development of the exoALMA collaboration
- Performing visibility modelling of ALMA dust continuum observations with the codes `frank` and `galario`
- Second publication (subm.) on multi-epoch and multi-frequency analysis of the inner disc and circumplanetary material of PDS 70
- Performing synthetic observations using the CASA software

Master Thesis, · *Group of Prof. Dr. Giuseppe Lodato* — *Milan, Italy*

Università degli Studi di Milano — *Sept. 2019 - April. 2022*

- Implementing and optimising semi-analytical models for the retrieval of planet masses from kinematic observations
- Running numerical hydrodynamical SPH simulations with the code `PHANTOM`

Bachelor Thesis, · *Group of Prof. Dr. Giuseppe Lodato* — *Milan, Italy*

Università degli Studi di Milano — *Sept. 2016 - Dec. 2019*

- Running radiative transfer simulations with the code `MCFOST` to model a circumbinary and two circumstellar discs simultaneously and compare with ALMA Band 4 and 7 observations

Skills

Languages Italian *Native* · English *Bilingual* · French *Conversational* · German *Basic* ·
Programming Python · C/C++ · LaTeX · Git
Soft skills Adaptability · Teamwork · Organisation · Curiosity

Community service

exoALMA EU Data Analysis Workshop — *Nice, France*

Co-Organiser — *July 2023*

- Organising meetings, booking rooms, coordinating coffee breaks, managing visitors arrival and providing general assistance

Internship Supervision: Ambre De Masure — *Nice, France*

Graduate Student Advisor — *May 2024 - July 2024*

- Supervision of BSc student for three months, providing guidance and support to overcome scientific challenges

ALMA DPR Proposal reviewer — *Nice, France*

Proposal Reviewer — *May 2023 - ongoing*

- Contribution to the Distributed Peer Review process of ALMA proposals

exoALMA Workshop 2025 — *Heidelberg, Germany*

Co-Organiser — *March 2025*

- Organising meetings, booking rooms, coordinating coffee breaks, managing visitors arrival and providing general assistance

References

Myriam Benisty Director, Planet and Star Formation Department · Max-Planck-Institute für Astronomie, Heidelberg *benisty@mpia.de*

Andrew Winter Marie Sklodowska-Curie Postdoctoral Fellow, ERC Protoplanets · Queen Mary UL (from May 1st) · Observatoire de la Côte d'Azur, Nice *andrew.winter@oca.eu*

Giovanni Rosotti Associate Professor · Università degli Studi di Milano *giovanni.rosotti@unimi.it*

Publications

1 published first-authored refereed publication, 1 submitted. Total citations: 1.
2 published second-authored refereed publications. H-index: 2.0.
17 published co-authored refereed publications, 1 submitted.

Subm. **co-author** on **Sierra Morales, A., Benisty, M., Pinilla, P. et al.** Leaky dust trap in the PDS 70 disk revealed by ALMA Band 9 observations *MNRAS*

Subm. **Fasano, D., Benisty, M., Curone, P. et al.** Inner Disc and Circumplanetary Material in the PDS 70 System: Insights from Multi-Epoch, Multi-Frequency ALMA Observations *A&A*

2025 **co-author** on 17 first-wave papers from the exoALMA collaboration published in the ApJ

2024 **Fasano, D., Winter, A. J., Benisty, M., et al.** Planet-driven spirals in protoplanetary discs: Limitations of the semi-analytical theory for observations *2024, A&A, 687, A223*

2024 **Hilder, T., Fasano, D., Bollati, F., & Vandenberg, J.** Wakeflow: A Python package for semi-analytic models of planetary wakes *J. 2023, The Journal of Open Source Software, 8, 4863*

2021 **Ragusa, E., Fasano, D. , Toci, C., et al.** Circumbinary and circumstellar discs around the eccentric binary IRAS 04158+2805 — a testbed for binary–disc interaction *, MNRAS, 507, 1157*