

Pietro Curone

Curriculum Vitae

Postdoctoral Researcher at Universidad de Chile
Camino El Observatorio 1515, Las Condes, Santiago, Chile
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ORCID: 0000-0003-2045-2154

Professional Experience

Postdoctoral Researcher

Mar. 2024 - present

Departamento de Astronomía, Universidad de Chile

- Studying planet formation with dust and gas tracers in collaboration with Prof. Laura Pérez and Prof. Gijs Mulders.

Education

PhD in Physics, Astrophysics and Applied Physics

Nov. 2020 - Feb. 2024

Università degli Studi di Milano

- Thesis: “Observational constraints of the interaction between planets and protoplanetary disks”.
- Supervisor: Prof. Leonardo Testi (Univ. Bologna, INAF - OA Arcetri).
Co-supervisors: Prof. Marco Lombardi (Univ. Milano), Dr. Francesco Borsa (INAF - OA Brera).

Master's degree in Physics

Oct. 2018 - Sept. 2020

Università degli Studi di Milano

- Final degree grade: 110/110 cum laude.
- Title of the Thesis: “Modeling Dust Emission of the Protoplanetary Disc Around the Very Low Mass Star CIDA 1”.
Supervisor: Prof. Giuseppe Lodato (Univ. Milano).
Co-supervisors: Dr. Leonardo Testi (ESO, INAF - OA Arcetri), Dr. Stefano Facchini (ESO).

Bachelor's degree in Physics

Oct. 2015 - Sept. 2018

Università degli Studi di Pavia

- Final degree grade: 110/110.
- Thesis: “Study of X-ray flares in the region of the Andromeda Galaxy”.
Supervisor: Prof. Andrea De Luca (Univ. Pavia, INAF-IASF Milano).
Co-supervisors: : Dr. Martino Marelli (INAF-IASF Milano), Dr. Ruben Salvaterra (INAF-IASF Milano).

Experience in other institutes

Observatoire de la Côte d'Azur, Nice, France

10/12/2023 - 16/12/2023

Scientific visit

Institute for Astronomy, University of Hawaii, Honolulu, USA

01/08/2023 - 07/10/2023

Secondment of 2.3 months funded by the Dustbusters program.

European Southern Observatory (ESO) Garching, Germany

01/01/2022 - 31/12/2022

Visiting period of 1 year.

European Southern Observatory (ESO) Garching, Germany <i>Internship.</i>	15/02/2020 - 15/04/2020
European Southern Observatory (ESO) Garching, Germany <i>Scientific visit.</i>	05/12/2019 - 12/12/2019
INAF-IASF Milano, Italy <i>Internship.</i>	01/05/2018 - 30/09/2018

Research interests

Protoplanetary disks. Planet-disk interactions. Planet formation. Protoplanetary disks around low-mass stars.
 Calibration and analysis of observations from ALMA and VLA interferometers. Study of dust properties in disks.
 Computational fluid dynamics: smoothed particle hydrodynamics simulations. Radiative transfer simulations.
 Reduction of near-infrared observations from the iSHELL instrument on the IRTF telescope.
 Spectroastrometry.

Publications

- Curone, P.**, Izquierdo, A. F., Testi, L., Lodato, G., Facchini, S., Natta, A., Pinilla, P., Kurtovic, N. T., Toci, C., Benisty, M., Tazzari, M., Borsa, F., Lombardi, M., Manara, C. F., Sanchis, E., Ricci, L., *A giant planet shaping the disk around the very low-mass star CIDA 1*, 2022, A&A, 665, A25. Published in A&A
- Curone, P.**, Testi, L., Macías, E., Tazzari, M., Facchini, S., Williams, J. P., Clarke, C. J., Natta, A., Rosotti, G., Toci, C., Lodato, G., *Radio multiwavelength analysis of the compact disk CX Tau: Presence of strong free-free variability or anomalous microwave emission*, 2023, A&A, 677, A118. Published in A&A

Observational programs awarded

- PI of the CRIRES-VLT program 112.2611** “Search for nanodiamonds features around a T Tauri star”, 3.7 hours, Rank C. July 2023
- PI of the VLA program 23B-232** “Anomalous microwave emission or variability in the compact CX Tau disk?”, 3.2 hours, Priority A. May 2023
- PI of the VLA program 23A-323** “A complete multiwavelength analysis of the compact protoplanetary disk CX Tau”, 12 hours, Priority A. Nov. 2022
- Co-I of 1 VLA program (23A-255).
- Co-I of 3 ALMA programs (2022.1.00874.S, 2023.1.00692.S, 2023.1.00766.S)

International collaborations

exoALMA: Member of the core team for calibration and imaging in the exoALMA Large Program, that is conducting the first hunting campaign for still-forming planets in the sub-mm regime. Leader of the continuum data analysis.

Dustbusters: Member of the Marie-Curie Action RISE project Dustbusters "Dust and gas in planet forming discs", consisting of an international team to study different aspects of physical mechanisms regulating protoplanetary disks and planet formation.

ECOGAL: Member of the ERC-Synergy funded project ECOGAL, which aims at building the first predictive model for the Galactic ecosystem, from the disk of the Milky Way to the formation of stars and planets.

Conference, workshop, and school participation

ERC Stellar-MADE Winter Meeting 2024, participation; Grenoble, France.	16-19/01/2024
Dustbusters "Milan Xmas Workshop 2023", invited talk: "Analysis of the continuum emission in the exoALMA sample"; University of Milan, Italy.	19/12/2023
Astrocoffee Talk: "Multiwavelength analysis of the typical protoplanetary disk CX Tau: highly variable free-free or anomalous microwave emission?"; Institute for Astronomy, Honolulu, USA.	15/09/2023
exoALMA EU Data Analysis Workshop, participation; Observatoire de la Côte d'Azur, Nice, France.	03-07/07/2023
ECOGAL 2023 Workshop, participation; Institut Pascal, Paris, France	08-12/05/2023
SMA Science Seminar: "Exploring Protoplanetary Disks around Low-Mass Stars with Multiwavelength Observations and Numerical Simulations"; online and at CfA, Cambridge, USA.	31/03/2023
exoALMA Start of Science Workshop, participation; MIT Endicott House, Boston, USA.	05-09/12/2022
ESO conference "Disks and Planets across ESO Facilities", contributed talk: "A multiwavelength analysis revealing high variability in the compact protoplanetary disk CX Tau"; Garching, Germany.	29/11/2022
INAF Osservatorio Astrofisico di Arcetri Stars and Planets Oriented Koffee (SPOK), talk: "A giant planet shaping the disk around the very low-mass star CIDA 1"; Florence, Italy.	13/06/2022
ESO Star and Planet Formation Webinar, invited talk: "A giant planet shaping the disk around the very low-mass star CIDA 1"; Garching, Germany.	07/06/2022
exoALMA Kick-Off Workshop, participation; Villa Cagnola, Gazzada Schianno, Italy.	23-27/05/2022
1st Dustbusters School , participation; Villa Feltrinelli, Gargnano del Garda, Italy.	16-20/05/2022
ECOGAL 2022 Workshop, participation; Institut Pascal, Paris, France	09-13/05/2022
Dustbusters "Milan Xmas Workshop 2021", invited talk: "Giant planet formation around very low mass stars: the case of CIDA 1"; University of Milan, Italy.	20-21/12/2021
Seminar to the ECOGAL collaboration: "Planet formation in very low mass stars: the case of CIDA 1"; online.	11/11/2021
ESO virtual workshop "The Star-Planet Connection", contributed talk: "Planet formation around very low mass stars: the case of CIDA 1"; online.	25-28/10/2021

OPTICON School "Virtual OPTICON Archival School using ESO and ALMA data"; online.	19-26/06/2021
Institut Pascal workshop "From prestellar cores to solar nebulae II", attendance; online.	17-28/05/2021
ECOGAL post-processing workshop, contributed talk : "Modeling the disc around CIDA 1 while testing different post-processing pipelines"; online.	03-04/03/2021
Dustbusters Mid-Term Meeting, contributed poster : "Modeling the dust emission of CIDA 1"; online.	14-15/12/2020
ESO conference "Five years after HL Tau: a new era in planet formation", attendance; online.	07-11/12/2020
Dustbusters "Milan Xmas Workshop on Star Formation", attendance; Milan, Italy.	20/12/2019

Teaching

Two-day workshop on ALMA calibration data for 1st-year PhD students in the Star and Planet Formation Group of the University of Milan.	Jan 2024
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Community service

Reviewer for The Astronomical Journal.	Since 2023
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Conference and meeting organization

Organizer of the Milan Star and Planet Formation Group Meeting.	Feb. 2023 - Dec.2023
Member of the LOC for the ESO conference "Disks and Planets across ESO Facilities".	Nov. 2022
Member of the organizing committee for the Dustbusters "Milan Xmas Workshop 2021".	Dec. 2021

Awards

Premio al merito scolastico 2019/2020: Scholarship from Assolombarda for master's degree results.

Premio Carlo Alberto Sacchi 2015: High school excellence scholarship from Rotary Club Voghera.

Premio al merito scolastico 2014/2015: Scholarship from Confindustria Pavia for high school results.

Outreach

Pint of Science 2023 Pavia, Italy.	May 2023
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