

Mario Damiano

Ph.D. in Astrophysics

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Education

2018

Ph.D. in Astrophysics, *University College London (UCL)*, Data analysis of space and ground observations of exoplanetary atmosphere using Machine Learning algorithms.
London, England, UK.

2015

MSc Physics (Astrophysics), *University of Palermo (UNIPA)*, thesis title: Exoplanetary atmosphere: high resolution spectrum with instruments iLocater and HIRES, Summa cum laude.
Palermo, Italy.

2013

BSc Physics Science, *University of Palermo (UNIPA)*, thesis title: Exoplanets and stellar activity on IR-band, First-class.
Palermo, Italy.

Professional experience

2018

JPL Postdoctoral Fellow, *Jet Propulsion Laboratory – California Institute of Technology*.
CA, United States

2015

Research Associate, *National Institute of Astrophysics Palermo Observatory (INAF-OAPa)*.
Palermo, Italy

Research interests

- Composition and dynamic of exoplanetary atmospheres;
- Spectroscopic data analysis of observations taken from space and ground facilities;
- Spectral interpretation through information retrieval process;
- Deep learning algorithm for data analysis.

Selected Awards

- JPL Postdoctoral Fellowship at NASA/JPL, 2018
- Ph.D. studentship, European Research Council (ERC) and National Institute of Astrophysics (INAF), 2015

Languages

Italian Native
English Fluent

Mother Tongue
Daily practice

Publications list

First Author

ExoReL: A Bayesian Inverse Retrieval Framework For Exoplanetary Reflected Light Spectroscopic Analysis
Damiano, M. & Hu, R., in prep.

A Principal Component Analysis-based Method to Analyze High-resolution Spectroscopic Data on Exoplanets
Damiano, M., Micela, G., Tinetti, G., ApJ, 878, 153, June 2019.
DOI:<https://doi.org/10.3847/1538-4357/ab22b2>

Near-IR transmission spectrum of HAT-P-32 b using HST/WFC3.

Damiano, M., Morello, G., Tsiaras, A., Zingales, T., Tinetti, G., AJ, 154, 39, Jul 2017.

DOI: 10.3847/1538-3881/aa738b

Co-Author

A chemical survey of exoplanets with ARIEL,

Tinetti, G., ... **Damiano, M.**, ... plus 242 co-authors, Exp Astron 46, 135, Sep 2018.

DOI: 10.1007/s10686-018-9598-x

A Population Study of Gaseous Exoplanets,

A. Tsiaras, I. P. Waldmann, T. Zingales, M. Rocchetto, G. Morello, **M. Damiano**, K. Karpouzas, G. Tinetti, L. K. McKemmish, J. Tennyson, and S. N. Yurchenko, AJ, 155, 156, Mar 2018.

DOI: 10.3847/1538-3881/aaaf75

The Transiting Exoplanet Community Early Release Science Program for JWST,

Bean, J. L., ... **Damiano, M.**, ... plus 96 co-authors, arXiv, Mar 2018.

arXiv: 1803.04985

A New Approach to Analyzing HST Spatial Scans: The Transmission Spectrum of HD 209458 b,

Tsiaras, A.; Waldmann, I. P.; Rocchetto, M.; Varley, R.; Morello, G.; **Damiano, M.**; Tinetti, G., ApJ, 832, 202, Dec 2016.

DOI: 10.3847/0004-637X/832/2/202

Detection of an Atmosphere Around the Super-Earth 55 Cancri e,

Tsiaras, A.; Rocchetto, M.; Waldmann, I. P.; Venot, O.; Varley, R.; Morello, G.; **Damiano, M.**; Tinetti, G.; Barton, E. J.; Yurchenko, S. N.; Tennyson, J., ApJ, 820, 99, Apr 2016.

DOI: 10.3847/0004-637X/820/2/99

Presentations

Talks at conference and seminars:

- Talk at Division Planetary Science (DPS) 51 / European Planetary Science Congress (EPSC) 14, Geneva, Switzerland. September 2019.
- Invited seminar Yuk luncheon seminar, California Institute of Technology, CA, USA. April 2019.
- Invited seminar JPL luncheon seminar, Jet Propulsion Laboratory, CA, USA. February 2019.
- Talk at Centre for Planetary Science (CPS) meeting, Mullard Space Science Laboratory (MSSL), England, UK. June 2018.
- Invited talk at University College London (UCL), "Workshop for cooperation with Indian Astrophysics Community", London, England, UK. May 2018.
- Talk at European Planetary Science Congress (EPSC) 12, Riga, Latvia. September 2017.
- Talk at 10th GAPS2.0 meeting, Palermo, Italy. May 2017.
- Invited seminar INAF-Astronomical Observatory Palermo (INAF-OAPa), Palermo, Italy. January 2017.
- Talk at Division for Planetary Sciences (DPS) 48 / European Planetary Science Congress (EPSC) 11, Pasadena, CA, USA. October 2016.

Posters at conference:

- Poster at UK Exoplanet Community Meeting (UKEXOM2018), Oxford, England, UK. March 2018.
- Poster at UK Exoplanet Community Meeting (UKEXOM2017), St. Andrews, Scotland, UK. March 2017.
- Poster at Ariel meeting, Brussels, Belgium. November 2016.

IT Skills

Coding Python, C, Matlab

OS MacOS (preferred), Linux, Windows

Text editing L^AT_EX, Microsoft Office, Apple Keynote

Other information

Online courses Advanced Courses on Udemy platform on Machine Learning (ML) and Deep Learning (DL) for Python.

Tutoring activity Supervised master student for data analysis project on high resolution spectroscopic observations. October 2017. Palermo, Italy.