

Dr. Marie-Aline Martin-Drumel

Researcher at CNRS

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Research experience

- 2017– **CNRS Researcher**, section: *Atoms and Molecules–Optics and Lasers–Hot Plasma Physics*, Institut des Sciences Moléculaires d'Orsay, CNRS, University of Paris-Saclay.
- 2014–2017 **Postdoc**, *Center for Astrophysics | Harvard & Smithsonian*, Cambridge, MA, USA, Advisor: Dr. M. C. McCarthy.
- 2013–2014 **Postdoc**, *I. Physikalisches Institut*, Universität zu Köln, Germany, Advisor: Prof. Dr. S. Schlemmer.
- 2012–2013 **Research assistant**, *Laboratoire de Physico-chimie de l'Atmosphère*, Dunkirk, France.
- 2009–2012 **Graduate research assistant**, *Institut des Sciences Moléculaires d'Orsay, CNRS and SOLEIL Synchrotron, AILES beamline*, Gif-sur-Yvette, France, Advisors: Prof. Ph. Bréchnac, Dr. O. Pirali.

Education

- 2009–2012 **PhD in Physics**, *University of Paris-Sud (Paris-Saclay)*, Orsay, France.
Thesis: *Far-infrared spectroscopy of astrophysical molecules (French language)*
- 2006–2009 **BsC, MsC and High level Master in molecular physical chemistry**, *University of Paris-Sud (Paris-Saclay) and ENS Cachan (ENS Paris-Saclay)*, Orsay, France.

Scientific production

- 58 publications in peer-reviewed scientific journals *h index: 18 (Google Scholar 03/2021)*
- 4 proceedings
- 34 oral communications in conferences *including 12 invited talks*
- 20 seminars *including 3 outreach seminars*

Awards

- 2021 **CNRS bronze medal**, Early career scientist distinction.
- 2020 **CPPS Prize**, *Paris-Saclay Chemical-Physics federation*, Young Scientist Award.
- 2016 **Miller Prize**, *71st International Symposium on Molecular spectroscopy*, best presentation award for a postdoc.
- 2014 **James Brault Award**, *Journal of Quantitative and Radiative Transfer*, Young Scientist Award.
- 2011 **Amat-Mills Award**, *22nd Colloquium on High Resolution Molecular Spectroscopy*, best student poster award.
- 2011 **Best student poster award**, *SOLEIL Users' Meeting 2011*.

Main grants

- 2021–2023 **LabEx PALM**, *Université Paris-Saclay*, porteur: M.-A. Martin-Drumel, 37 k€.
SPECiES : SPECTroscopie Chirped-pulse en Expansion Supersonique au kHz
- 2019–2022 **ANR JCJC**, *Agence Nationale de la Recherche*, PI: M.-A. Martin-Drumel, 272 k€.
LISTed, ANR-19-CE30-0017-01
- 2019–2028 **DIM-ACAV⁺**, *Région Ile-de-France*, PI: M.-A. Martin-Drumel, 200 k€.
- 2018–2019 **FEI**, *CNRS*, PI: M.-A. Martin-Drumel, 100 k€.

Teaching

- 2020 **Master 2 of chemistry**, 9 h , University Paris-Saclay.
2014 **Master de Physique**, 30 h (*practical work*), Universität zu Köln, Allemagne.
2012–2013 **ATER, Bachelor of physics**, 192 h , University of Littoral Côte d'Opale, Dunkirk, Calais.
2009–2012 **Bachelor of physics**, 192 h , University Paris-Sud.

Mentoring

- 1 PhD student co-supervised (+ 2 with minor supervision)
- 10 Master students
- 10 bachelor students
- 3 middle school and high school students

Jurys and peer-reviewed

- 2020 **Evaluation of M. Mattia Melosso PhD manuscript**, *U. Bologna, Italie*.
2020 **Assitant professor position, member of the selection committee**, *U. Reims Champagne-Ardenne*, section: physics.
2013– **Reviewer for international journals**, *The Astrophysical Journal*, *The Journal of chemical Physics*, *ACS Earth and Space Chemistry*, *Frontiers in Astronomy and Space Sciences...*

Comitees

- 2021 – **Member of the Physics Graduate School Council of the University of Paris-Saclay**.
2020 – **Member of *Not Intentional Seminars on Molecular Spectroscopy (NISMS)* scientific comitee**, *Co-organizer of the inaugural meeting with K. L. Kelvin Lee (MIT) & G. Stephen Kocheril (Brown U.)*.
2020 – **Member of the ISMO institute council**.
2016 – **Member of the organizing committee of the “Women’s networking reception”**, *International Symposium on Molecular Spectroscopy*, Champaign-Urbana, USA.

Selected publications

- [5] **M.-A. Martin-Drumel**, J. Baraban, P. B. Changala, J. Stanton, and M. C. McCarthy, “The hunt for elusive molecules: Insights from joint theoretical and experimental investigations”, *Chemistry – A European Journal* **25**, *Invited mini-review*, 7243 (2019).
- [4] J. H. Baraban, **M.-A. Martin-Drumel**, P. B. Changala, S. Eibenberger, M. Nava, D. Patterson, J. F. Stanton, G. B. Ellison, and M. C. McCarthy, “The Molecular Structure of *gauche*-1,3-Butadiene: Experimental Establishment of Non-planarity”, *Angewandte Chemie International Edition* **57**, 1821 (2018).
- [3] **M.-A. Martin-Drumel**, M. C. McCarthy, D. Patterson, B. A. McGuire, and K. N. Crabtree, “Automated microwave double resonance spectroscopy: A tool to identify and characterize chemical compounds”, *Journal of Chemical Physics* **144**, 124202 (2016).
- [2] M. Nava, **M.-A. Martin-Drumel**, C. A. Lopez, K. N. Crabtree, C. C. Womack, T. L. Nguyen, S. Thorwirth, C. C. Cummins, J. F. Stanton, and M. C. McCarthy, “Spontaneous and selective formation of HSNO, a crucial intermediate linking H₂S and nitroso chemistries”, *Journal of the American Chemical Society* **138**, 11441 (2016).
- [1] **M.-A. Martin-Drumel**, O. Pirali, D. Balcon, Ph. Brechignac, P. Roy, and M. Vervloet, “High resolution far-infrared Fourier transform spectroscopy of radicals at the AILES beamline of SOLEIL synchrotron facility”, *Review of Scientific Instruments* **82**, 113106 (2011).