



# RESEARCHER CV

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## Research interests

Star formation, astrochemistry, prebiotic chemistry in space, molecular astrophysics, complex organic molecules, molecular fractionation, astrobiology, molecular hot cores, molecular outflows, turbulence in star-forming regions, fragmentation in molecular clouds, variability of young stars.

## Current position

August 1 2017 - today :

Marie Skłodowska-Curie ASTROFIT2-COFUND Fellow  
(agreement n. 664931)  
Osservatorio Astrofisico di Arcetri, INAF-OAA  
Largo Enrico Fermi 5, I-50125, Firenze, Italy

## Previous positions

- January 8 2015 - July 31 2017: iALMA Fellowship (postdoctoral researcher in Astrophysics)  
Osservatorio Astrofisico di Arcetri, INAF-OAA  
Largo Enrico Fermi 5, I-50125 Firenze, Italy
- July 25 2014 - January 7 2015: Post-doctoral researcher in Astrophysics  
Spanish Council for Scientific Research (CSIC-CAB/INTA), Torrejón de Ardóz (Madrid), Spain
- 2010 - 2014: JAE Studentship: PhD student in Astrophysics  
Spanish Council for Scientific Research (CSIC-CAB/INTA), Torrejón de Ardóz (Madrid), Spain

## Summary of scientific production

- 15 refereed papers published (8 as first author), 116 citations in the last 4 years
- H index = 7
- 16 oral contributions and 11 poster contributions to national and international conferences.

## Awards

- 2017: 'Marie Skłodowska-Curie Actions **Seal of Excellence**', quality label awarded by the European Commission.
  - March 2017: Best Poster contribution in **IAUS 332: Astrochemistry VII - Through the Cosmos from Galaxies to Planets** (Puerto Varas, Chile): *The first detections of the key prebiotic molecule PO in star-forming regions.*
- 2014: Finalist of the "**Best Spanish doctoral thesis in Astrophysics Prize**", awarded by the Spanish Astronomical Society (SEA).

## Academic achievements

- 2010-2014: PhD in Astrophysics, Thesis title: '**The role of low-mass star clusters in the formation of massive stars**', supervised by Prof. Jesús Martín-Pintado.  
<http://www.arcetri.astro.it/~rivilla/Tesis/>  
Grade: "Sobresaliente" cum laude (maximum)  
Institution: Center of Astrobiology, Spanish Council for Scientific Research (CSIC-CAB/INTA), Torrejón de Ardoz, Madrid, Spain / University Autónoma of Madrid, Spain
- 2008-2010: Postgraduate Master's Degree in Astrophysics  
Institution: University Complutense of Madrid (UCM) and University Autónoma of Madrid (UAM), Spain.  
Grade: 8.89 (10.0 max)
- 2003-2008: Degree in Physics Science  
Institution: University Autónoma of Madrid (UAM), Spain  
Grade: 8.86 (10.0 max)
- 2001-2003: High School in Scientific Subjects  
Institution: Jorge Manrique High School, Tres Cantos, Madrid, Spain  
Grade: 9.9 (10.0 max).

## Academic Grants Awarded

- 2008-2010: JAE Studentship for the completion of the postgraduate Master's degree in Astrophysics, awarded by the Spanish Council for Scientific Research (CSIC).
- 2007-2008: Collaboration Grant, awarded by the Spanish Ministry of Education and Science.
- 2007: Grant of Introduction to Research for students at penultimate degree course, awarded by the Spanish Council for Scientific Research (CSIC).
- 2005-2006: Grant of Excellence, awarded by the Region of Madrid (CAM).
- 2004-2005: Grant of Excellence, awarded by the Region of Madrid (CAM).
- 2003-2004: Grant of Excellence, awarded by the Region of Madrid (CAM).

## Research Funds Awarded

- 2017-today: *BIOSFERA - Birth Of Stars and liFe: Edge Research at INAF* (PI Rivilla; 150,000 EUR) project awarded by the European Commission under the Marie Skłodowska-Curie grant agreement n. 664931 (Arcetri Astrophysical Observatory, Florence).
- 2015-2017: iALMA Project Fellowship (Post-doc position at Arcetri Astrophysical Observatory, Florence)
- 2014-2015: Researcher contract (Post-doc position at the Center of Astrobiology, Spanish Council for Scientific Research, CSIC, Madrid)

- 2010-2012: Contract for the completion of the PhD doctoral thesis (PhD position at the Center of Astrobiology, Spanish Council for Scientific Research, CSIC, Madrid)

### **Participation in Funded Scientific Projects**

- 2017-today: *BIOSFERA - Birth Of Stars and liFe: Edge Research at INAF* (150,000 EUR) project awarded by the European Commission under the Marie Skłodowska-Curie grant agreement n. 664931.

Participation: PI

- 2015-2017: *iALMA Italian Premiale Project*, Italian National Institute of Astrophysics (INAF).

Participation: Post-doc

- 2011-2015: Spanish contribution to SAFARI/SPICA (Phase B) and HERSCHEL (Phase D). Scientific exploitation of observations in the mid- and far-IR with satellites (AYA2010-21697-C05-01), Spanish Council for Scientific Research, CSIC, Madrid.

Participation: PhD student

- 2008-2010: HERSCHEL: Contribution to the Control Center of the HIFI instrument and to the Scientific Program (ESP2007-65812-C02-01), Spanish Council for Scientific Research, CSIC, Madrid.

Participation: PhD student and Post-doc

### **Participation in Scientific Events**

- 20 - 24 August 2017: **Molecules in space - Linking the interstellar medium to exoplanets**, Washington DC, USA

Participation: Talk - *Complex organic molecules in star-forming regions: hot cores and hot corinos.*

<http://ism2planets.strw.leidenuniv.nl>

- 17 - 19 July 2017: **Current and future perspectives of Chemical modelling in Astrophysics**, Hamburg, Germany

Participation: Talk - *Phosphorus, the missing prebiotic element. How to detect and model it.*

<http://www.hs.uni-hamburg.de/astromodel2017/>

- 5 - 9 June 2017: **Francesco's Legacy: Star formation in space and time**, Florence, Italy

Participation: Talk - *The formation of prebiotic molecules in star-forming regions*

<http://www.arcetri.astro.it/~sfst2017/>

- 20 - 24 March 2017: **IAUS 332: Astrochemistry VII - Through the Cosmos from Galaxies to Planets**, Puerto Varas, Chile

Participation: Poster - *The first detections of the key prebiotic molecule PO in star-forming regions* (awarded with the prize of best poster of the conference)

<https://iaus332.physics.unsw.edu.au>

- 13 - 17 March 2017: **Astrowin 2017**, University of Florida, Gainesville, USA

Participation: Talk 1 - *The formation of prebiotic molecules in star-forming regions: Phosphorus and COMs*

Talk 2 - *The low D/H ratio in the Galactic Center quiescent gas*

<http://www.astro.ufl.edu/~jt/astrowin/>

- 21 - 25 November 2016: **European Conference on Laboratory Astrophysics** - ECLA 2016 - Gas on the Rocks

Participation: Poster - *The first detections of the key prebiotic molecule PO in star-forming regions*

<http://www.ecla2016.com>

- 10 - 13 October 2016: **Fractionation of isotopes in space: from the solar system to galaxies**, Florence, Italy

Participation: Poster - *Low D/H ratio in the Galactic Center Quiescent Gas*

<https://www.arcetri.astro.it/~fraction/index.html>

- 2 -20 May 2016: Programme **Origins of habitable Planets**, Gothenburg Centre for Advanced Studies in Science and Technology, Chalmers University, Gothenburg, Sweden

Participation - Talk 1 - *Update on radio/X-ray input from YSOs*

Talk 2 - *The path to pre-biotic molecules*

<https://www.chalmers.se/en/centres/GoCAS/Events/Origins-of-Habitable-Planets/Pages/default.aspx>

- 10 - 11 March 2016: **1st Italian Workshop on Astrochemistry: Astronomical Complex Organic Molecules in different environments**, Florence, Italy

Participation: Talk - *Understanding the formation of astrobiological molecules in star-forming regions*

<https://www.arcetri.astro.it/astrochem/>

- 4 - 8 October 2015: Conference **From Clouds to protoplanetary disks: the chemical link**, Hans Harnack Haus, Berlin,

<https://cas-events.mpe.mpg.de/indico/event/0/>

Participation: Talk - *Understanding the formation of astrobiological molecules in star-forming regions.*

- 15 - 17 September 2015: **5<sup>th</sup> Workshop of the Italian Astrobiology Society: Life in a Cosmic context**, International School for Advanced Studies (SISSA), Trieste,

<https://www.ict.inaf.it/indico/event/106/>

Participation: Talk - *Understanding the formation of astrobiological molecules in star-forming region.s*

- July 1-8 2015: **Orion (un)plugged conference**, University of Vienna, Austria

Participation: Talk - *The role of low-mass stars in the formation of massive stars in Orion*,

[https://www.univie.ac.at/alveslab/orion\\_unplugged/assets/online\\_program.pdf](https://www.univie.ac.at/alveslab/orion_unplugged/assets/online_program.pdf)

Participation: Poster – *Constraining the non-thermal emission from young stars in Orion*

- 22-26 June 2015: **European Week of Astronomy and Space Science (EWASS 2015)**, Universidad de la Laguna, Tenerife, Spain,

<http://eas.unige.ch/EWASS2015/>

Participation: invited by the Spanish Astronomical Society (SEA).

- 9-10 April 2015: **ALMA proposal preparation day 2015**, Italian ARC, Istituto di Radioastronomia di Bologna, Italy  
[http://www.alma.inaf.it/index.php/ALMA\\_proposal\\_preparation\\_day\\_2015](http://www.alma.inaf.it/index.php/ALMA_proposal_preparation_day_2015)
- 15-20 March 2015: Conference **The Soul of massive star formation**, Puerto Varas, Chile,  
<http://www.das.uchile.cl/star-formation/>  
Participation: Poster - *The role of low-mass star clusters in the formation of massive stars*  
<http://www.arcetri.astro.it/~rivilla/Posters/Poster-cile.pdf>.
- 19-20 February 2015: **iALMA Project Workshop**, CNR Research Area, Bologna, Italy  
[http://ialma.alma.inaf.it/index.php/19-20\\_February\\_2015\\_-\\_Face2face\\_meeting](http://ialma.alma.inaf.it/index.php/19-20_February_2015_-_Face2face_meeting)  
Participation: Talk - *HCO as precursor of glycolaldehyde*
- 22-23 January 2015: **Workshop on mm-VLBI with ALMA**, CNR Research Area, Bologna, Italy  
[http://www.alma.inaf.it/index.php/Workshop\\_on\\_mm-VLBI\\_with\\_ALMA](http://www.alma.inaf.it/index.php/Workshop_on_mm-VLBI_with_ALMA)  
Participation: Poster – *Constraining the non-thermal emission from young stars in Orion*,  
<http://www.alma.inaf.it/images/Rivilla.pdf>.
- 20-21 January 2015: **Third workshop on Millimeter Astronomy in Italy**, CNR Research Area, Bologna, Italy  
[http://www.alma.inaf.it/index.php/Terzo\\_Workshop\\_sull%27Astronomia\\_Millimetrica\\_in\\_Italia](http://www.alma.inaf.it/index.php/Terzo_Workshop_sull%27Astronomia_Millimetrica_in_Italia)  
Participation: Talk – *Radio flares from Orion young stars*  
[http://www.alma.inaf.it/images/Rivilla\\_mm15.pdf](http://www.alma.inaf.it/images/Rivilla_mm15.pdf).
- 8-12 September 2014: **44st Young European Radio Astronomers Conference (YERAC)**, Toruń Centre for Astronomy at the Nicolaus Copernicus University, Poland,  
<http://yerac2014.astro.uni.torun.pl>  
Participation: Poster and talk – *Short- and long-term radio variability of young stars in the Orion Nebula Cluster and Orion Molecular Cloud*  
<http://yerac2014.astro.uni.torun.pl/wp-content/uploads/yerac-2014-rivilla.pdf>.
- 10-14 June 2013: **Conference Massive Stars: From  $\alpha$  to  $\Omega$** , Rhodes, Greece  
<http://a2omega-conference.net/Default.aspx>  
Participation: Poster – *The role of low mass star clusters in massive star formation. The Orion case*,  
[http://www.arcetri.astro.it/~rivilla/Posters/Poster-Rodas-Session1\\_17\\_Rivilla.pdf](http://www.arcetri.astro.it/~rivilla/Posters/Poster-Rodas-Session1_17_Rivilla.pdf).
- 9-13 July 2012: **X Astronomical Spanish Society Meeting**, Valencia  
<http://www.sea-astronomia.es/drupal/SEA2012>  
Participation: Poster – *The kinematics of the hottest gas in massive star-forming regions*  
<http://www.arcetri.astro.it/~rivilla/Posters/Poster-X-SEA-VMRivilla.pdf>.
- 18-20 July 2011: **41st Young European Radio Astronomers Conference (YERAC)**, University of Manchester - Jodrell Bank Observatory, UK,  
<http://www.jb.man.ac.uk/meetings/YERAC2011/>  
Participation: Poster and talk – *The overall systematic trends in the kinematics of the hottest gas in massive star-forming regions*  
<http://www.jodrellbank.manchester.ac.uk/meetings/YERAC2011/downloads.html#Presentations>

- 30 May - 3 June 2011: **The Molecular Universe (IAU Symposium 280)**, Toledo, Spain  
2011 <http://www.iau.org/science/meetings/past/symposia/993/>  
Participation: Poster – *The overall systematic trends in the kinematics of the hottest gas in massive star forming regions*  
<http://adsabs.harvard.edu/abs/2011IAUS..280P.316R>  
[http://www.arcetri.astro.it/~rivilla/Posters/poster\\_toledo\\_victor.pdf](http://www.arcetri.astro.it/~rivilla/Posters/poster_toledo_victor.pdf)
- 18 October 2010: **1st Center of Astrobiology Astrophysics Department Workshop**, Torrejón de Ardoz, Madrid, Spain  
Participation: Talk – *On the role of low mass stars in the formation of massive stars. The Orion Case.*
- 28 November - 1 December 2010: **ALMA Early Science**, IRAM, Grenoble, France  
<http://www.iram-institute.org/EN/content-page-183-7-67-183-0-0.html>

### Invited Scientific Seminars

- December 14 2017 (*planned date*), Center for Space and Habitability (CSH), Bern, Switzerland
- November 14 2016: *Understanding the formation of prebiotic molecules in star-forming regions*, Istituto di Radioastronomia (IRA), Bologna, Italy
- May 24 2015: *Understanding the formation of astrobiological molecules in star-forming regions*, General Seminar, Arcetri Astrophysical Observatory, Florence, Italy, <http://www.arcetri.astro.it/~rivilla/Talks/rivilla-seminar-arcetri6.pdf>
- December 19 2014: *The role of low-mass star clusters in the formation of massive stars*, University of Alicante, Alicante, Spain
- August 29 2014: *The role of low-mass star clusters in the formation of massive stars*, Smithsonian Astrophysical Observatory, Harvard-Smithsonian Center for Astrophysics (CfA), Cambridge, MA, USA
- April 7 2014: *The role of low-mass star clusters in the formation of massive stars*, University of Vienna, Austria

### Short research stays

- 3 -14 July 2017, **Queen Mary University**, London, UK  
Collaborator: Dr. Izaskun-Jiménez-Seraa  
Work: Reduction and analysis of astronomical data about the chemical complexity of the Galactic Center.
- 8 -12 May 2017, **Center of Astrochemical Studies (CAS), Max Planck Institute for Extraterrestrial Physics (MPE)**, Munich, Germany  
Collaborator: Prof. Dr. Paola Caselli and Dr. Anton Vasyunin  
Work: Comparison between observations and chemical models of phosphorus chemistry.
- September 22 2014 - October 11 2014: **National Radio Astronomy Observatory (NRAO)**, Socorro, New Mexico, USA).  
Collaborators: Dr. Claire Chandler and Dr. Jan Forbrich  
Work: Extensive calibration, imaging and preliminary analysis of VLA data.

- February 19 - May 23 2011: **Smithsonian Astrophysical Observatory, Harvard-Smithsonian Center for Astrophysics (CfA)**, Cambridge, MA, USA  
Collaborators: Dr. Qizhou Zhang and Dr. Izaskun Jiménez-Serra  
Work: Reduction and study of SMA interferometric observations of the dense gas of massive star forming regions.

- 21 October - December 20 2010: **Arcetri Astrophysical Observatory**, INAF, Florence, Italy.  
Collaborator: Dr. Riccardo Cesaroni  
Work: Analysis of VLA interferometric observations of massive star-forming regions.

- February 15-19 2010: **University College of London (UCL)**, England.  
Collaborator: Dr. Jeremy Yates  
Work: Use of the radiative transfer code SMMOL to model molecular lines from vibrationally excited states.

- July 31- September 30 2009: **National Radio Astronomy Observatory (NRAO)**, Socorro, New Mexico, USA.  
Collaborator: Dr. Claire J. Chandler  
Work: Reduction of high frequency VLA observations of regions of massive star formation, both galactic and extragalactic.

### **Participation in schools**

- 19-21 September 2016: **KROME Computational School**, Florence, Italy, <http://kromepackage.org/bootcamp/index.php>
- September 2011: **6th IRAM 30m Summer School**, Institute de Radio Astronomie Millimetrique (IRAM), Granada, Spain, <http://iram-institute.org/EN/content-page-202-7-67-202-0-0.html>
- June 2010: **12th Synthesis Imaging Workshop**, National Radio Astronomy Observatory, Socorro, New Mexico, USA, <http://www.aoc.nrao.edu/events/synthesis/2010/>

### **Teaching activities**

- June 2017: 1 hr lesson to high-school students: "Astrochemistry", Arcetri Astrophysical Observatory, Florence, Italy
- June 2016: 1 hr lesson to high-school students: "Star Formation: physics and chemistry", Arcetri Astrophysical Observatory, Florence, Italy
- May 25-29 2015: School of Astrophysics "Francesco Lucchin"  
Tutorial: "Using the ALMA Science Archive"  
<http://www.arcetri.astro.it/~lt/scuola2015/>

### **Experience organising scientific events**

- Local Organising Committee (LOC) member of the conference "*Fractionation of isotopes in space: from the solar system to galaxies*" (Florence, Italy, 10-13 October 2016), <https://www.arcetri.astro.it/~fraction/>
- Scientific Organising Committee (SOC) co-chair and Local Organising Committee (LOC) member of the conference "*Cosmic Rays: the salt of the star formation recipe*",

### **Experience refereeing scientific papers**

- Referee of 1 article published in Astronomy and Astrophysics.
- Referee of 1 article published in Astrophysical Journal.

### **Astrophysical Facilities used**

- Atacama Large Millimeter Array (ALMA): Principal investigator [PI] in 3 projects.
- Very Large Array (VLA): Principal investigator [PI] in 5 projects.
- IRAM NOEMA interferometer: PI in 1 project.
- Sub-millimeter Array (SMA): PI in 2 projects.
- Green Bank Telescope (GBT): PI in 2 projects.
- Effelsberg Telescope: PI in 1 project.
- APEX Telescope: co-PI in 1 project.
- IRAM 30 meter telescope: PI in 4 projects, including a Director's Discretionary Time (DDT) project.
  - Deep Space Network (DSN) 34 meter telescope: PI in 1 project.
  - I have also used multi-wavelength archival data from multiple others facilities: Chandra Space Telescope, Hubble Space Telescope (HST), Spitzer Space Telescope, James Clerk Maxwell Telescope (JCMT), Herschel Space Telescope, United Kingdom IR Telescope (UKIRT), or Sloan Digital Sky Survey (SDSS).

### **Software Skills**

- *Development and testing of astronomical software*: Madrid Data Cube Analysis on ImageJ (MADCUBA), software package to visualize and analyze datacubes and spectra.
- *Astrophysical data calibration and analysis*: CASA, AIPS, GILDAS, MADCUBA, MIRIAD, GBT-IDL, ds9, Aladdin Sky Atlas, SIMBAD, NED.
- *Programming*: Fortran, Python (basic).

### **Science outreach activities**

- June 2017: Interview for MEDIA-INAF TV to explain the detection of CH<sub>3</sub>NCO in solar-type protostars, <http://www.media.inaf.it/2017/06/08/isocianato-di-metile-attorno-a-baby-stelle/>
- May 2017: "*Bambineide 2017: Arcetri e le sette terre - Giochiamo con la Scienza!*", Open Day for the public (kids and parents) at the Arcetri Astrophysical Observatory, Firenze, Italy.
- March 2016: "*What are those tiny dots in the sky?*", talk at Europa International School, Sevilla, Spain.
- May 2015: "*Bambineide 2015: I segreti della luce*", Open Day for the public (kids and parents) at the Arcetri Astrophysical Observatory, Firenze, Italy.
- June 2012: "*Astrophysics for kids*", talk at Antonio Osuna School, Tres Cantos, Madrid, Spain.
- June 2012: "*Astrophysics for kids*", talk at Jorge Manrique High School, Tres Cantos, Madrid, Spain.
- April 2010: "*Radio-interferometry: Revealing the details of the invisible universe*", talk at Jorge Manrique High School, Tres Cantos, Madrid, Spain.



# List of publications

As first author:

- R. Martín-Domenech (co-led), **V. M. Rivilla** (co-led), I. Jiménez-Serra, D. Quénard, L. Testi, J. Martín-Pintado, 'Detection of methyl isocyanate ( $\text{CH}_3\text{NCO}$ ) in a solar-type protostar', MNRAS, 469, 2230, arXiv:1701.04376, <https://arxiv.org/abs/1701.04376>
- **V. M. Rivilla**, M. T. Beltrán, J. Martín-Pintado, F. Fontani, P. Caselli, R. Cesaroni, 'On the chemical ladder of esters. Detection and formation of ethyl formate in the W51 e2 hot molecular core', A&A, 599, 26, arXiv:1611.00719, <https://arxiv.org/abs/1611.00719>
- **V. M. Rivilla**, M. T. Beltrán, R. Cesaroni, F. Fontani, C. Codella, Q. Zhang, 'Formation of ethylene glycol and other complex organic molecules in star-forming regions', A&A, 598, 59, arXiv:1608.07491, <https://arxiv.org/abs/1608.07491>
- **V. M. Rivilla**, F. Fontani, M. T. Beltrán, A. Vasyunin, P. Caselli, J. Martín-Pintado, R. Cesaroni, 'The first detections of the key prebiotic molecule PO towards star-forming regions', ApJ, 826, 161, arXiv:1605.06109, <http://arxiv.org/abs/1605.06109>
- **V. M. Rivilla**, C. J. Chandler, J. Sanz-Forcada, I. Jiménez-Serra, J. Martín-Pintado, and J. Forbrich, 'Short- and long-term radio variability of young stars in the Orion Nebula Cluster and Molecular Cloud', ApJ, 808, 146, August 2015, doi:10.1088/0004-637X/808/2/146, arXiv:1504.0089, <http://arxiv.org/abs/1504.00849>
- **V. M. Rivilla**, I. Jiménez-Serra, J. Martín-Pintado, J. Sanz-Forcada, 'The role of low-mass star clusters in forming the massive stars in DR 21', MNRAS, 437:1561-1575, January 2014, doi: 10.1093/mnras/stt1989; arXiv:1307.528, <http://arxiv.org/abs/1310.4049>
- **V. M. Rivilla**, J. Martín-Pintado, J. Sanz-Forcada, I. Jiménez-Serra, A. Rodríguez-Franco, 'X-ray embedded stars as driving sources of outflow-driven turbulence in OMC1-S', MNRAS, 434:2313-2328, September 2013, doi: 10.1093/mnras/stt1173; arXiv:1307.5283, <http://arxiv.org/abs/1307.5283>
- **V. M. Rivilla**, J. Martín-Pintado, I. Jiménez-Serra, A. Rodríguez-Franco, 'The role of low mass star clusters in massive star formation. The Orion case', A&A, 554: A48, June 2013, doi: 10.1051/0004-6361/201117487; arXiv:1302.2763, <http://arxiv.org/abs/1302.2763>

## As coauthor:

- R. Cesaroni, A. Sánchez-Monge, M. T. Beltrán, K. G. Johnston, L. T. Maud, L. Moscadelli, J. C. Mottram, A. Ahmadi, V. Allen, H. Beuther, T. Csengeri, S. Etoaka, G. A. Fuller, R. Galván-Madrid, C. Goddi, T. Henning, M. G. Hoare, P. D. Klaassen, R. Kuiper, M. S. N. Kumar, S. Lumsden, T. Peters, **V. M. Rivilla**, P. Shilke, L. Testi, F. van der Tak, S. Vig., C.M. Walmsley, H. Zinnecker, 'Chasing discs around O-type (proto)stars: Evidence from ALMA observations', *A&A*, 59 602
- J. Forbrich, M. Reid, K. M. Menten, **V. M. Rivilla**, S. Wolk, U. Rau, C. J. Chandler, 'Extreme radio flares and associated X-ray variability from young stellar objects in the Orion Nebula Cluster', *ApJ*, in press, arXiv: 1706.05562, <https://arxiv.org/abs/1706.05562>
- F. Fontani, **V. M. Rivilla**, P. Caselli, A. Palau, 'Phosphorus-bearing molecules in massive dense cores', *ApJ*, 822, 30, 2016, arXiv:1604.02565, <http://arxiv.org/abs/1604.02565>
- J. Forbrich, **V. M. Rivilla**, K. M. Menten, M. Reid, C. J. Chandler, U. Rau, S. Bhatnagar, S. J. Wolk, S. Meingast, 'The population of Compact Radio sources in the Orion Nebula Cluster', *ApJ*, 822, 93, 2016, arXiv:1603.05666, <http://arxiv.org/abs/1603.05666>
- M. T. Beltrán, E. Bianchi, J. Brand, V. Casasola, R. Cesaroni, C. Codella, F. Fontani, L. Gregorini, G. Guidi, L. Hunt, E. Liuzzo, A. Marconi, M. Massardi, L. Moscadelli, R. Paladino, L. Podio, I. Prandoni, K. L. J. Rygl, **V. M. Rivilla**, L. Testi, 'Italian Science Case for ALMA Band 2+3', arXiv:1509.02702, <http://arxiv.org/abs/1509.02702>
- M. Dierickx, I. Jiménez-Serra, **V. M. Rivilla**, and Q. Zhang, 'Submillimeter Array high angular resolution observations of the Monoceros R2 Star Forming Cluster', *ApJ*, 803:89, April 2015, doi:10.1088/0004-637X/803/2/89; arXiv:1503.05230, <http://arxiv.org/abs/1503.05230>
- N. Peretto, G. A. Fuller, Ph. André, D. Arzoumanian, **V.M. Rivilla**, S. Bardeau, S. Duarte Puertas, J. P. Guzman, C. Lenfestey, G.-X. Li, F. A. Olguin, B. R. Röck, H. de Villiers, J. Williams, 'SDC13 infrared dark clouds: Longitudinally collapsing filaments?', *A&A*, 561:A835, January 2014, doi:10.1051/0004-6361/201322172; arXiv:1311.0203, <http://arxiv.org/abs/1311.0203>
- I. Jiménez-Serra, A. Baéz-Rubio, **V.M. Rivilla**, J. Martín-Pintado, Q. Zhang, M. Dierickx, N. Patel, 'A new radio recombination line maser object toward the MonR2 HII region', *ApJ*, 764:L4, February 2013, doi: 10.1088/2041-8205/764/1/L4; arXiv:1212.0792, <http://arxiv.org/abs/1212.0792>