

Curriculum Vitae

Miguel RAMOS

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UNESCO code:

2508.09 (Permafrost) 2213.02(Heat Transfer)

2509.12(Meteorología Polar)

2509.08 (Micrometeorología)

2512(Ciencias del Espacio).

Key Word: Polar and Planetary Permafrost, Active Layer.



INTRODUCTION:

Miguel RAMOS was born on the 28th October 1958 and is currently Professor at the Department of physics and mathematics in the University of Alcalá (Spain). He concluded his 5-year degree in fundamental physics in 1980, earned his MSc in 1981 and his PhD on 1984 on the thermal devices applied to the solar energy absorption. His research activities are currently developed through the University of Alcalá and the Spanish polar program. His main scientific interests are currently related to the characterization polar permafrost, through the multidisciplinary use of Physical and Mathematical Modeling, Data Analysis and Spatial Statistics methods. His participation activities, past and ongoing, are related to 25 national and international research projects and networks; in 20 of them as Principal Investigator (PI). Presently, he is co-I in projects on the study of the permafrost and its relation with the climate change in the peninsula Antarctica region and in the REMS (Rover Environmental Monitoring Station) project that is and instrument included in the Mars Science laboratory NASA mission and is co-I in the Mars 2020 project of NASA too. He has published more than 100 papers in international indexes journals and more than 100 papers in proceedings of conferences and chapters of books. He is a regular reviewer for several international journals and a member of the scientific committees of international and national conferences mainly in the field polar permafrost and cryospheric sciences. Finally, He is president of the Spanish cryospheric commission belonging to the IASC and IUGG.

EDUCATION:

- **Master in Fundamental Physics (1980). Complutense University. Madrid. Spain.**
- **PhD in Heat transfer applied to solar energy (1984). Extremadura University. Badajoz. Spain.**

TEACHING

EXPERIENCE: MORE THAN 38 YEARS TEACHING COURSES OF APPLIED PHYSICS IN DIFERENTET DEGREES: ENGINEERING, PHYSICS, CHEMISTRY, AND ENVIRONMENTAL STUDIES.

- 1980-1984, Extremadura University, assistant.
- 1984-1988, Alcalá University, temporary professor.
- 1988- 2017, Alcalá University, professor.
- 2017- Alcalá University full professor.

TEACHING COURSES:

Analytical Mechanics	Thermodynamics	Environmental Physics
Applied physics for Engineering.	Micrometeorology	Polar Cryosphere
Heat transfer	Fluid Mechanics	GENERAL PHYSICS

RESEARCH PROJECTS

EXPERIENCE:

- **1980-1984 Thermal devices applied to the solar energy absorption.**
- **1984-1988 Non-linear solutions for the Stephan heat transfer problems.**
- **1988-1992 Geophysical study of the Deception (Antarctica) active volcano.**
- **1992-1999 Energy balance on soil surface in polar and mountain permafrost regions.**
- **1999-2019 Permafrost and climate change in the Antarctic Maritime region.**

MORE REPRESENTATIVE PROJECT PARTICIPATION IN THE LAST SIX YEARS:

1. Título del proyecto:- 2º CONGRESO IBERICO DEL INTERNATIONAL PERMAFROST ASSOCIATION.

Entidad financiadora: **Ministerio de Ciencia e Innovación. Subdirección general de proyectos. REFERENCIA: CGL2008-00826-E/BTE. de investigación. (6000 euros).**

Entidades participantes: **Universidad de Alcalá. UAH.**

Duración, desde: **Septiembre 2008** hasta: **Agosto 2009**

Investigador principal: **Dr. Miguel RAMOS**

Número de investigadores participantes: **5**

2. Título del proyecto:- “MANTENIMIENTO, CONTROL Y ANALISIS DE DATOS DE LAS EXPERIENCIAS TSP-IPY Y CALM-S”.

Entidad financiadora: **Ministerio de Ciencia e Innovación. CGL2008-02042-E/ANT (30000 euros). Subdirección general de proyectos de investigación.**

Entidades participantes: **Departamento de Física. UAH y Unidade de investigação de Geografia Física e Ambiente, Centro de Estudos Geograficos. Univ. Lisboa. Duración, desde: Marzo-2009 hasta: Nov-2010**

Investigador principal: **Dr. Miguel RAMOS SAINZ.**

Número de investigadores participantes: **5**

3. Título del proyecto:- “ESTADO TÉRMICO DEL PERMAFROST Y EVOLUCIÓN DE LA CAPA ACTIVA EN LAS ESTACIONES DE MEDIDA TSP Y CALM-S. ISLAS LIVINGSTON Y DECEPCION (ANTÁRTIDA). PERMAPLANET”.

Entidad financiadora: **Ministerio de Ciencia e Innovación. Subdirección general de proyectos de investigación. REFERENCIA: CTM2009-10165 (Subprograma ANT).**

Entidades participantes: **Departamento de Física. UAH y Unidade de investigação de Geografia Física e Ambiente, Centro de Estudos Geograficos. Univ. Lisboa. Duración, desde: Enero-2010 hasta: Dic- 2013**

Investigador principal: **Dr. Miguel RAMOS SAINZ.**

Financiación recibida: **70000 euros**

Número de investigadores participantes: **5**

4. Título del proyecto:- “CURSO DE INICIACION A LA INVESTIGACION POLAR ANTARTICA”.

Entidad financiadora: **Ministerio de Ciencia e Innovación. Subdirección general de proyectos de investigación. REFERENCIA: CTM2010-10405-E (subprograma ANT).**

Entidades participantes: **Depto. Ecología. Universidad Autónoma Madrid. Departamento de Física. UAH**

Duración, desde: **2010** hasta: **2011**

Investigador principal: **Dr. Javier BENAYAS.**

Financiación recibida: **4000 euros**

Número de investigadores participantes: **5**

5. Título del proyecto:- “Evolução holocénica ambiental na Antártida Marítima. Interações entre o permafrost e o ambiente lacustrino (HOLOANTAR)”.

Entidad financiadora: **Fundacion para a Ciencia e a Tecnologia. REFERENCIA: FCT. PTDC/CTE-GIX/119582/2010.**

Entidades participantes: **Universidade de LISBOA. Universidad de Alcalá. Instituto de Ciencias de la Tierra Jaume Almera (IJA). Universidade Federal de Viçosa (UFV).** Duración, desde: **2012** hasta: **2014**

Investigador principal: **Dr. Marc OLIVA.**

Financiación recibida: **120.000 euros**

Número de investigadores participantes: **16**

6. Título del proyecto:- LAS ATMOSFERAS PLANETARIAS DESDE UNA PERSPECTIVA ASTROBIOLOGICA Y OPERACION Y EXPLOTACION DE REMS/MSL.

REFERENCIA: AYA2012-38707

Entidad financiadora: **Ministerio de Ciencia e Innovación.**

Entidades participantes: **CAB-INTA. UAH**

Duración, desde: **1/01/2013** hasta: **31/12/2014**

Investigador principal: **Dr. FRANCISCO JAVIER MARTIN TORRES.**

Financiación recibida: **730.000 euros**

Número de investigadores participantes: **16**

7. Título del proyecto:- “MANTENIMIENTO y ACTUALIZACIÓN DE LAS ESTACIONES CALM Y TSP EN LAS ISLAS LIVINGSTON Y DECEPCIÓN, ANTÁRTIDA”

Entidad financiadora: **Ministerio de Ciencia e Innovación. (subprograma ANT)**
. REFERENCIA: CTM2011-15565-E(ANT).

Subdirección general de proyectos de investigación.

Entidades participantes: **UAH**

Duración, desde: **2011** hasta: **2014**

Investigador principal: **Dr. MA de Pablo.**

Financiación recibida: **16.000 euros**

Número de investigadores participantes: **5**

8. Título del proyecto: Permafrost and Climate change in Antarctica (PERMANTAR-2).

Entidad financiadora: **Fundação para a Ciencia e la Tecnologia, Portugal: FCYT. REFERENCIA: PTDC/AAC-CLI/098885/2008.**

Duración: **1/03/2010 – 31/07/2012**

Investigador responsable: **Dr. Gonçalo Vieira**

Financiación recibida: **183.849 €**

9. Título del proyecto: Permafrost e Alterações Climáticas na Península Antártica (PERMANTAR-3).

Entidad financiadora: **Fundação para a Ciencia e la Tecnologia, Portugal: FCYT. REFERENCIA: PTDC/AAG-GLO/3908/2012.**

Duración: **01/05/2013 – 30/04/2015**

Investigador responsable: **Dr. Gonçalo Vieira**

Financiación recibida: **199.434 €**

10. Título del proyecto:.- Ciencia y Tecnología de instrumentos espaciales para la caracterización del ambiente marciano en múltiples misiones de NASA: REMS, TWINS y MEDA.

Entidad financiadora: **Ministerio de Economía y Competitividad. Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, en su convocatoria de 2014. REFERENCIA: ESP2014-54256-C4-1-R.**

Entidades participantes: **CAB. UAH.**

Duración, desde: **2014** hasta: **2015**

Investigador principal: **Dr. JA. Manfredi.**

Financiación recibida: **2.057.000,00 euros**

Número de investigadores participantes: **12**

11. Título del proyecto:.- CARACTERIZACION Y EVOLUCION DE LA CUBIERTA NIVAL Y SU EFECTO EN EL REGIMEN TERMICO DEL PERMAFROST Y LA CAPA ACTIVA EN LAS ISLAS LIVINGSTON Y DECEPCION (ANTARTIDA).

Entidad financiadora: **Ministerio de Economía y Competitividad. Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, en su convocatoria de 2014. REFERENCIA: CTM2014-52021-R.**

Entidades participantes: **Univ. Alcalá y Univ. Oviedo**

Duración, desde: **2015** hasta: **2018**

Investigador principal: **MA. De Pablo**

Financiación recibida: **240.000 euros**

Número de investigadores participantes: **8**

12. Título del proyecto: Ciencia y tecnología de instrumentos espaciales para la caracterización del ambiente marciano en múltiples misiones de NASA: REMS, TWINS y MEDA.

Entidad financiadora: **PLAN NACIONAL I+D. REFERENCIA: (ESP2015-68281-C4-1-R).**

Entidades participantes: **CAB, INTA, UPC y IMSE.**

Duración: **01/2016 hasta 12/2016**

Investigador responsable: **José Antonio Rodríguez Manfredi**

Financiación recibida: **66.000€**

MORE REPRESENTATIVE BIBLIOGRAPHY IN THE LAST TEN YEARS:

2009

35A.- Tomé, D., Ramos, M., Hidalgo, M.A., Vieira G., Neves, M. (2009).
“Actividades del proyecto Permamodel durante la campaña antártica 2006-07”. Finisterra,
pp.- 117-125. Vol. XLIV, nº 87. ISSN: 0430-5027.

36A.- **Ramos, M., Vieira, G. (2009).**

“Ground Surface Enthalpy Balance Based on Borehole Temperatures (Livingston Island, Maritime Antarctic)”.

CRYOSPHERE, 3 (1), 133–145. doi:10.5194/tc-3-133-2009. ISSN: 1994-0416.

37A.- **Ramos, M., Hasler, A., Vieira, G., Gruber, S., Hauck, C. (2009).**

“Drilling and Installation of Boreholes for Permafrost Thermal Monitoring on Livingston Island in the Maritime Antarctic”.

PERMAFROST AND PERIGLACIAL PROCESSES. 20 (1): 57–64.

doi: 10.1002/ppp.635. ISSN: 1045-6740.

2010

38A.- Vieira, G., Bockheim, J., Guglielmin, M., Balks, M., Abramov, A., Boelhouwers, J., Cannone, N., Ganzert, L., Gilichinsky, DA., Gotyachkin, S., Lopez-Martinez, J., Meiklejohn, I., Raffi, R., **Ramos, M.**, Schaefer, C., Serrano, E., Simas, F., Sletten, R., Wagner, D. (2010).

“Thermal State of Permafrost and Active-layer Monitoring in the Antarctic: Advances during the International Polar Year 2007–2009”.

PERMAFROST AND PERIGLACIAL PROCESSES. 21(2): 182–197 doi:
10.1002/ppp.685. ISSN: 1045-6740.

39A.- Sebastian, E., Armiens, C., Gomez-Elvira, J., Zorzano, MP., Martinez-Frias, J., Esteban, B., **Ramos, M (2010).**

The Rover Environmental Monitoring Station Ground Temperature Sensor: A Pyrometer for Measuring Ground Temperature on Mars”.

SENSORS, 10 (10 9211-9231. doi: 10.3390/s101009211. ISSN:1424-8220.

2011

40A.- Molina, A., de Pablo, M.A., **Ramos, M. (2011).**

“Caracterización climática de la región de Nili Fossae, Marte”. M+A.

Revista Electrónica de Medioambiente. UCM. Número 10, págs. 40-62 Madrid. ISSN 1886-3329.

2012

41A.- Ramos, M., de Pablo, M.A., Sebastian, E., Armiens, C., Gómez-Elvira, J. (2012).
Temperature gradient distribution in Permafrost Active layer, using a prototype of the
Ground Temperature Sensor (REMS-MSL) on Deception Island (Antarctica).

Cold Regions Science and Technology 72 (2012) 23–32.

doi:10.1016/j.coldregions. 2011.10.012. ISSN: 0165-232X.

42A.- Correia, A., Vieira, G., Ramos, M. (2012)

“Thermal conductivity and thermal diffusivity of cores from 26 meter deep borehole
drilled in Livingston Island, maritime Antarctica”.

Geomorphology. Vol: 155-156. Pp. 7-11. doi: 10.1016/j.geomorph.2011.12.012.
ISSN: 0169-555X,

43A.- Melo, R., Vieira, G., Caselli, A., Ramos, M. (2012).

“Susceptibility modelling of hummocky terrain distribution using the information
value method (Deception Island, Antarctic Peninsula)”.

Geomorphology. Vol: 155-156. Pp.-88-95. doi:10.1016/j.geomorph.2011.12.027.
ISSN: 0169-555X.

44A.- Gómez-Elvira, J., Alves, J., Armiens, C., Castaner, L., Dominguez, M., Gómez, F.,
Genzer, M., Kahanpaa, H., Lepinette, A., Kowaski, L., Harri, A.M., Haberle, R., Jimenez,
V., McEwan, I., Martinez-Frias, J., Martín-Torres, J., Martín, J., Mora, L., Moreno, J.,
Navarro, S., de Pablo, M.A., Peinado, V., Peña, A., Polkko, J., Ramos, M., Reno, N.,
Rodríguez-Manfredi, J.A., Ricard, J., Richardson, M., Romeral, J., Serrano, J., Sebastián,
E., de la Torre Juárez, M., Torres, J., Torrero, F., Urqui, R., Velasco, T., Zorzano, M.P.
(2012).

“REMS an Environmental Sensor Suite for Mars Science Laboratory Rover”.

Space Science Reviews September 2012, Volume 170, Issue 1-4, pp 583-640, Space Sci
Rev. doi: 10.1007/s11214-012-9921-1. ISSN: 0038-6308.

2013

45A.- de Pablo, M.A., Blanco, J.J., Molina, A., Ramos, M. Vieira, G., Quesada, A.
(2013).

“Interannual active layer variability at the Limnopolar Lake CALM site on Byers
Peninsula, Livingston Island, Antarctica”.

Antarctic Science 25(2), 167–180. **doi:10.1017/S0954102012000818**. ISSN: 0954-1020 EISSN: 1365-2079.

46A.- Bockheim, J., Vieira, G., **Ramos, M.**, Lopez-Martinez, J., Serrano, E., Guglielmin, M., Wilhelm, K., Nieuwendam, A. **(2013)**.
“Climate Warming and Permafrost Dynamics in the Antarctic Peninsula Region”.
Global and Planetary Change. 100. Pp.- 215-223. **doi: 10.1016/j.gloplacha.2012.10.018**. ISSN: 0921-8181.

47A.- Mora, C., Vieira, G., **Ramos, M. (2013)**.

“Evaluation of Envisat ASAR IMP imagery for snow mapping at varying spatial resolution (Deception Island, South Shetlands-Antarctica)”.

Antarctic palaeoenvironments and Earth-Surface Processes. Geological Society, London, Special Publications, 381:481-493, first published on July 24, 2013.

doi:10.1144/SP381.19. ISSN 0305-8719. ISBN.- 978-1-86239-363-9. Online ISSN 2041-4927

48A*.- Blake, D. F., Morris, R. V., Kocurek, G., et al. and **MSL Science Team. (2013)**.

“Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow”.

Science 27 September 2013: Vol. 341 no. 6153. **doi: 10.1126/science.1239505**.

49A*.- Webster, C.R., Mahaffy, P.R., Flesch, G.J., et al. and the **MSL Science Team. (2013)**.

“Isotope Ratios of H, C, and O in CO₂ and H₂O of the Martian Atmosphere”.

Science 19 July 2013. Vol. 341 no. 6143 pp. 260-263. **doi: 10.1126/science.1237961**.

50A*.- Webster, C R., Mahaffy, P R., Atreya, S K., et al. and **MSL Science Team. (2013)**.

“Low Upper Limit to Methane Abundance on Mars”

Science Volume: 342 Issue: 6156 Pages: 355-357. **doi: 10.1126/science.1242902**.

51A*.- Williams, R. M. E., Grotzinger, J. P., Dietrich, W. E., et al. and **MSL Science Team. (2013)**.

“Martian Fluvial Conglomerates at Gale Crater”.

Science 31 May 2013: Vol. 340 no. 6136 pp. 1068-1072. **doi: 10.1126/science.1237317**

52A*.- Mahaffy, P.R., Webster, C.R., Sushil Atreya, K., et al. and **MSL Science Team. (2013)**.

“Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover”.

Science 19 July 2013: Vol. 341 no. 6143 pp. 263-266.

doi:10.1126/science.1237966.

53A*.- Meslin, P.-Y., Gasnault, O., Forni, O., et al. and **MSL Science Team. (2013).**

“Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars”.

Science 27 September 2013: Vol. 341 no. 6153. **doi: 10.1126/science.1238670**

54A*.- Stolper, E. M., Baker, M. B., Newcombe, M. E., et al. and **MSL Science Team. (2013).**

“The Petrochemistry of Jake_M: A Martian Mugarite”.

Science 27 September 2013: Vol. 341 no. 6153. **doi: 10.1126/science.1239463.**

55A*.- Leshin, L. A., Mahaffy, P. R., Webster, C. R., et al. and **MSL Science Team. (2013).**

“Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover”.

Science 27 September 2013: Vol. 341 no. 6153. **doi: 10.1126/science.1238937.**

56A*.- Bish, D. L., Blake, D. F., Vaniman, D. T., et al. and **MSL Science Team.(2013).**

“X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater”.

Science 27 September 2013: Vol. 341 no. 6153. **doi: 10.1126/science.1238932.**

2014

57A.- Goyanes, G.A., Vieira, G., Caselli, A., Mora, C., **Ramos, M.**, de Pablo Hernández, M.A., Neves, M., Santos, F., Bernardo, I., Gilichinsky, D., Abramov, A., Batista, V., Melo, R., Niewendam, A., Ferreira, A., Oliva, M. **(2014).**

“Régimen térmico y variabilidad espacial de la capa activa en isla Decepción, Antártida”. Revista de la Asociación Geológica Argentina. Pp. 112-124 Vol 71, No 1 **ISSN 1851-8249 (en línea). ISSN 1669-7316 (impreso).**

58A.- de Pablo, M.A., **Ramos, M.** and Molina, A. **(2014).**

“Thermal Characterization of the active layer at the Limnopolar lake CALM-S site on Byers Peninsula (Livingston Island), Antarctica”.

Solid Earth, Special Issue: Soil processes in cold-climate environments. Vol 5, 721-739, **doi:10.5194/se-5-721-2014.**

59A- Hamilton, V. E., Vasada, A., Sebastián, E., Armiens, C., De la Torre, **M., Ramos, M.**, Rafin, S. C. R., Palucis, M., Carrasco, I. Gómez-Elvira, J.,

Christiansen, P. R., Yingst, R. A., De Pablo, M. A., Martínez-Frias, J. et al. **(2014).**

“Observations and Preliminary Science Results from the First 100 Sols of MSL REMS Ground Temperature Sensor Measurements at Gale Crater”.

Journal Geophysical Research: Planets, 119(4): 745-770. **doi: 10.1002/2013JE004520.**

60A.- Martínez, G. M., Rennó, N., Fischer, E., Borlina, C. S., Hallet, B., de la Torre Juárez, M., Vasavada, A. R., **Ramos, M.**, Hamilton, V., Gomez-Elvira, J., Haberle, R. M. and the REMS Team. **(2014).**

“Surface Energy Budget and Thermal Inertia at Gale Crater: Calculations from Ground-Based Measurements”.

Journal of Geophysical Research – Planets. Source: Journal Geophysical Research: Planets Volume: 119. Issue: 8 Pages: 1822-1838 Published: AUG 2014. **doi: 10.1002/2014JE004618.**

61A.- Gómez-Elvira, J., Armiens, C., Carrasco, I., Genzer, M., Gómez, F., Haberle, R., Hamilton, M.V.E., Ari-Matti, H., Kahanpää, H., Kemppinen, O., Lepinette, A., Martín Soler, J., Martín-Torres, J., Martínez-Frías, J., Mischna, M., Mora1, L., Navarro, S., Newman, C., de Pablo, M.A., Peinado, V., Polkko, J., Rafkin, S.C.R., **Ramos, M.**, Rennó, N.O., Richardson, M., Rodríguez-Manfredi, J.A., Romeral Planelló, J.J., Sebastián, E., de la Torre Juárez, M., Torres, J., Urquí, R., Vasavada, A.R., Verdasca, J. and María-Paz Zorzano **(2014).**

“Curiosity's Rover Environmental Monitoring Station: The First 100 Sols.”

Journal Geophysical Research: Planets. Volume 119, Issue 7, pages 1680–1688, July 2014. **doi:10.1002/2013JE004576.**

62A*.- Ming, D. W., Archer Jr., P. D., Glavin, D. P., et al. and **MSL Science Team. (2014).**

“Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars”.

Science 24 January 2014: Vol. 343 no. 6169. **doi: 10.1126/science.1245267.**

63A*.- Kim, M. H. Y., Cucinotta, F. A., Nounu, H. N., et al. and **MSL Science Team. (2014).**

“Comparison of Martian surface ionizing radiation measurements from MSL-RAD with Badhwar-O'Neill 2011/HZETRN model calculations”.

Journal of Geophysical Research-Planets Volume: 119 Issue: 6 Pages: 1311-1321. **doi: 10.1002/2013je004549.**

64A*.- Melikechi, N.; Mezzacappa, A.; Cousin, A.; et al. and **MSL Science Team. (2014).**

“Correcting for variable laser-target distances of laser-induced breakdown spectroscopy measurements with ChemCam using emission lines of Martian dust spectra”.

Spectrochimica Acta Part B-Atomic Spectroscopy Volume: 96 Pages: 51-60.

doi: 10.1016/j.sab.2014.04.004.

65A*.- Rafkin, S. C. R., Zeitlin, C., Ehresmann, B., et al. and **MSL Science Team. (2014).**

“Diurnal variations of energetic particle radiation at the surface of Mars as observed by the Mars Science Laboratory Radiation Assessment Detector”.
Journal of Geophysical Research-Planets Volume: 119 Issue: 6 Pages: 1345-1358.
doi: 10.1002/2013je004525.

66A*.- Litvak, M. L., Mitrofanov, I. G., Sanin, A. B., et al. and **MSL Science Team. (2014).**

“Local variations of bulk hydrogen and chlorine-equivalent neutron absorption content measured at the contact between the Sheepbed and Gillespie Lake units in Yellowknife Bay, Gale Crater, using the DAN instrument onboard Curiosity”.
Journal of Geophysical Research-Planets Volume: 119 Issue: 6 Pages: 1259-1275.
doi: 10.1002/2013je004556.

67A*.- Ollila, A. M., Newsom, H. E., Clark, B., et al. and **MSL Science Team. (2014).**

“Trace element geochemistry (Li, Ba, Sr, and Rb) using Curiosity's ChemCam: Early results for Gale crater from Bradbury Landing Site to Rocknest”.
Journal of Geophysical Research-Planets Volume: 119 Issue: 1 Pages: 255-285.
doi: 10.1002/2013je004517.

68A*.- Grotzinger, J. P., Sumner, D. Y., Kah, L. C. et al., and **MSL Science Team. (2014).**

“A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars”.
Science 24 January 2014: Vol. 343 no. 6169. **doi:10.1126/science.1242777.**

69A*.- McLennan, S. M., Anderson, R. B., Bell III, J. F. et al. and **MSL Science Team. (2014).**

“Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars”.
Science 24 January 2014: Vol. 343 no. 6169. **doi: 10.1126/science.1244734.**

70A*.- Farley, K. A., Malespin, C., Mahaffy, P., Grotzinger, J. P., et al. and the **MSL Science Team. (2014).**

“In Situ Radiometric and Exposure Age Dating of the Martian Surface”.
Science 24 January 2014: Vol. 343 no. 6169. **doi: 10.1126/science.1248097.**

71A*.- Hassler, D.M., Zeitlin, C., Wimmer-Schweingruber, R.F., et al. and **MSL Science Team. (2014).**

“Mars' Surface Radiation Environment Measured with the Mars Science Laboratory's Curiosity Rover”.
Science 24 January 2014: Vol. 343 no. 6169. **doi:10.1126/science.1244797.**

72A*.- Vaniman, D. T., Bish, D. L., Ming, D. W., et al. and **MSL Science Team. (2014).**

“Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars”.

Science January 2014: Vol. 343 no. 6169. doi: [10.1126/science.1243480](https://doi.org/10.1126/science.1243480).

73A*.- Harri, A.-M., Genzer, M., Kempainen, O., et al. and the **REMS/MSL Science Team. (2014).**

“Pressure observations by the Curiosity rover: Initial results”.

Journal Geophysical Research: Planets, Vol. 119, 82–92.

doi:[10.1002/2013JE004423](https://doi.org/10.1002/2013JE004423), 2014.

74A*.- Haberle, R. M., Gómez-Elvira, J., de la Torre Juárez, M., et al. and **REMS/MSL Science Teams. (2014).**

Preliminary interpretation of the REMS pressure data from the first 100 sols of the MSL mission.

Journal Geophysical Research: Planets, 119, 440–453,

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- I have led more than 25 scientific campaigns focused in different projects related with mountain and polar permafrost.

PROFESSIONAL MEMBERSHIPS:

- **EUROPEAN GEOSCIENCES UNION (EGU).**
- **INSTITUTE OF PHYSICS (IOP).**
- **INTERNATIONAL PERMAFROST ASSOCIATION (IPA).**

HONORS AND AWARDS:

- Participant in the first scientific Spanish Antarctic campaign and received by HM the king of Spain (1988).
- NASA Group Achievement Award "for exceptional achievement defining the REMS scientific goals and requirements, developing the instrument suite and investigation, and operating REMS successfully on Mars", as said the 2013 NASA Honor Awards we got.
- NASA Group Achievement Award: "MSL prime mission Science and Operation team" (2015).

3 of October, 2019