

Date of the CVA	14/01/2021
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Section A. PERSONAL DATA

Name and Surname			
DNI/NIE/Passport		Age	
Researcher's identification number	Researcher ID		
	Scopus Author ID		
	ORCID		

* Obligatorio

A.1. Current professional situation

Institution	Universidad Complutense de Madrid		
Dpt. / Centre	FISICA DE LA TIERRA Y ASTROFÍSICA / Facultad de Ciencias Matemáticas		
Address			
Phone		Email	
Professional category	CONTRATADO DOCTOR INTERINO	Start date	2019
Keywords	Celestial mechanics; Mathematical astronomy		

A.2. Academic education (Degrees, institutions, dates)

Bachelor/Master/PhD	University	Year
Ciencia y Tecnología de la Ingeniería Geodésica y Cartográfica	Facultad de Ciencias Matemáticas	2013
Diploma de Estudios Avanzados.	Facultad de Ciencias Matemáticas	2010
Licenciado en Ciencias Matemáticas.	Facultad de Ciencias Matemáticas	2006

A.3. General quality indicators of scientific production

1 period of 6 years on research work (sexenios, recognized by the Spanish National Commission on Research Activity, CNEAI). Period 2009/15.

11 Scientific papers: 10 peer reviewed papers and 1 book. 8 SJR (5 T1, 3T2) and 7 JCR (3T1, 4T2).

Citations: 20 (Scopus), 69 (GoogleScholar); average citations 2.5 (Scopus), 6.9 (googleScholar).

h index: 2 (Scopus, WOS), 4 (Google Scholar).

Section B. SUMMARY OF THE CURRICULUM

Associate Professor at Complutense University. Teaching at the Faculty of Mathematics, Main research areas in Spatial Geodesy, Celestial Mechanics, Mathematical Engineering and Geographical Information Services. Involved in more than 10 Research Projects from 2009, including the Scientific Participation on the MEIGA-METNET PRECURSOR mission to Mars and the H2020 Geospatial based Environment for Optimisation Systems Addressing Fire Emergencies (GEO-SAFE) between them. They result in 12 scientific papers (10 peer reviewed and 2 book, 8 of them SJR (5 T1, 3T2)) y 18 international meetings attended. Additionally, contributes with CAI of Archaeometry an Archaeological Analysis from UCM with Aerial Photogrametry and Terrestrial LiDAR. Some examples are the Roman archaeological sites of Caraca (Driebes, Spain), Cerro de la Mesa (Alcolea de Tajo, Spain), Pedrosillo (Llerena, Spain) or Oppidum de los Rodiles de Aragón (Guadalajara, Spain). 1 period of 6 years on research work (sexenios, recognized by the Spanish National Commission on Research Activity, CNEAI).

Section C. MOST RELEVANT MERITS (ordered by typology)

C.1. Publications

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores

- 1 **Scientific paper.** Pilar Romero Pérez; Gonzalo Barderas Manchado; Javier Mejuto González. (2/3). 2018. Equilibrium positions on stationary orbits and planetary principal inertia axis orientations for the Solar System Advances in Space Research. Elsevier. 61-9, pp.2472-2481.
- 2 **Scientific paper.** Pilar Romero; Blanca Pablos; Gonzalo Barderas. (3/3). 2017. Analysis of orbit determination from Earth-based tracking for relay satellites in a perturbed areostationary orbit Acta Astronautica. Elsevier. 136, pp.434-442.
- 3 **Scientific paper.** (AC); Sandra Goicoechea; Pilar Romero. (1/3). 2016. Chronogram of Solar Observations for the EXOMARS16 Solar Irradiance Sensor Física de la Tierra. Complutense. 28, pp.83-95. ISSN 0214-4557.
- 4 **Scientific paper.** Pilar Romero; Gonzalo Barderas; Jose María García Roldán. (2/3). 2015. Station-Keeping Maneuvers to Control the Inclination Evolution of Areostationary Satellites Journal of Guidance, Control and Dynamics. 38-11, pp.2223-2227.
- 5 **Scientific paper.** (AC); Cristina Plaza; Pilar Romero. (1/3). 2014. Comparison of the methodology used for orbital parameters determination in the International GNSS Service Analysis Centers Física de la Tierra. Complutense. 26, pp.163-173. ISSN 0214-4557.
- 6 **Scientific paper.** Barderas, G.; Romero, P.(1/2). 2013. Observations of phobos shadow: Analysis of parameters connecting earth-mars reference frames Planetary and Space Science. 87, pp.30-36. ISSN 0032-0633.
- 7 **Scientific paper.** Barderas, G.; Romero, P.(1/2). 2013. On the inverse problem of determining Mars lander coordinates using Phobos eclipse observations Planetary and Space Science. 79-80-1, pp.39-44.
- 8 **Scientific paper.** Vázquez-Poletti, J.L.; Barderas, G.; Llorente, I.M.; Romero, P.(2/4). 2012. A model for efficient onboard actualization of an instrumental cyclogram for the mars MetNet mission on a public cloud infrastructure Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). 7133 LNCS-PART 1, pp.33-42.
- 9 **Scientific paper.** Barderas, G.; Romero, P.; Vazquez, L.; Vazquez-Poletti, J.L.; Llorente, I.M.(1/5). 2012. Opportunities to observe solar eclipses by Phobos with the Mars Science Laboratory Monthly Notices of the Royal Astronomical Society. 426-4, pp.3195-3200.
- 10 **Scientific paper.** Romero, P.; Barderas, G.; Vazquez-Poletti, J.L.; Llorente, I.M.(2/4). 2011. Spatial chronogram to detect Phobos eclipses on Mars with the MetNet Precursor Lander Planetary and Space Science. 59-13, pp.1542-1550.
- 11 **Popular science article.** Luis Vazquez; Francisco Valero; Pilar Romero; et al; ;. (9/16). 2017. Some elements of the present Martian research environment at Universidad Complutense de Madrid Sociedad Española de Matemática Aplicada. Boletín Electrónico. 14, pp.3-16.
- 12 **Book chapter.** Javier VALles Iriso; Irene Ortiz Nieto-Márquez; Teresa Chapa Brunet; Gonzalo Barderas Manchado; Jose Yravedra Sainz de los Terreros; Maria Turegano Botija. 2019. Una mirada al subsuelo. Estudio del yacimiento romano del Cerro de la Virgen de la Muela (Driebes, Guadalajara) mediante georradar multicanal Caraca y la Romanización de la hispania interior. pp.237-250.
- 13 **Scientific book or monograph.** Ari Matti Harri; Walter Schmidt; Pilar Romero; et al; (AC);. (5/11). 2012. Phobos eclipse detection on Mars: Theory and practice Raportteja - Rapporter - Reports. Ilmatieteen laitoksen omat julkaisut - Finish Meteorological Institute publications. 2012-2, pp.1-48. ISSN 0782-6079, ISBN 9789516977686.

C.2. Participation in R&D and Innovation projects

- 1 DECISION AID MODELS AND DATA SCIENCE IN DISASTER LOGISTICS, DEVELOPMENT AND SUSTAINABILITY (LOG4D). Ref. PID2019-108679RB-I00 Ministerio de Ciencia e Innovación.. Begoña Vitoriano. (Universidad Complutense de Madrid). 01/06/2020-31/05/2023. 48.300 €.
- 2 Mapping of the CO₂ deposits on the Martian polar caps derived from neutron flux variations (ESA RFP/3-16630/20/ES/CM) European Space Agency. Gonzalo Barderas. (Universidad Complutense). 21/01/2021-21/02/2021. 62.800 €.

- 3 Geospatial based Environment for Optimisation Systems Addressing Fire Emergencies (GEO-SAFE) H2020. European Union. (Universidad Complutense de Madrid). 01/2018-30/04/2020. 1.080.000 €. Team member.
- 4 Análisis, modelización y explotación de datos en la exploración de Marte: misiones ExoMars2016 y ExoMars2018 Ministerio de Economía, Industria y Competitividad. Luis Vázquez Martínez. (Universidad Complutense de Madrid). 30/12/2016-29/12/2019. 30.000 €.
- 5 Participación científica en la misión a Marte MEIGA-METNET PRECURSOR (AYA2011-29967-C05-02). Ministerio de Economía y Competitividad. Luis Vázquez Martínez. (Universidad Complutense de Madrid). 01/01/2012-30/09/2015. 210.000 €.
- 6 Participación científica en la misión a Marte MEIGA-METNET PRECURSOR (AYA2009-14212-C05-05/ESP). Ministerio de Ciencia e Innovación. Investigación. Luis Vázquez Martínez. (Universidad Complutense de Madrid). 01/01/2010-31/12/2011. 310.000 €.
- 7 Participación científica en la misión a Marte MEIGA-METNET PRECURSOR (AYA2008-06420-C04-03). Ministerio de Ciencia e Innovación. Luis Vázquez Martínez. (Universidad Complutense de Madrid). 01/01/2009-31/12/2009. 133.100 €.
- 8 Análisis, modelización y explotación de datos en la exploración de Marte Universidad Complutense de Madrid. Luis Vázquez Martínez. (Universidad Complutense de Madrid). From 22/12/2016. 6.000 €. Team member.
- 9 El LIDAR y los problemas geodésicos asociados Universidad Complutense de Madrid; BANCO SANTANDER, S.A.. Gracia Rodríguez Caderot. (Universidad Complutense de Madrid). From 01/05/2011. Team member.
- 10 Modelización Matemática en Ciencias de la Tierra y del Espacio (GR58/08 y GR35/10-A) Universidad Complutense de Madrid; Banco Santander, S.A.. Marta Folguera López. (Universidad Complutense de Madrid). From 01/10/2009. 4.985 €.

C.3. Participation in R&D and Innovation contracts

Control de Deformaciones Mediante Distanciometría Submilimétrica. Contrato Menor de Investigación firmado con la UPV como soporte al proyecto "Control de deformaciones en la ladera norte de La Muela de Cortes de Pallás (B-267) (T-726)". Universidad Politécnica de Valencia. Fuensanta González Montesinos.

C.4. Patents