CV date	17-05-2020

Part A. PERSONAL INFORMATION

First and Family name	Rafael Alejandro Montenegro Armas		
Social Security, Passport, ID number	42786576K	Age	61
Researcher codes	WoS Researcher ID *(*)*	L-1365-2014	
	SCOPUS Author ID*(*)*	35617533100	
	Open Researcher and Contributor ID (ORCID) **	0000-0002-4164-457X	

(*) At least one of these is mandatory
(**) Mandatory

A.1. Current position

Name of University/Institution	University of Las Palmas de Gran Canaria		
Department	University Institute for Intelligent Systems and Numerical Applications in Engineering (SIANI)		
Address and Country	Edificio Polivalente I, Campus Universitario de Tafira, 35016 Las Palmas de Gran Canaria, Spain		
Phone number	+34928457400	E-mail	rafael.montenegro@ulpgc.es
Current position	Full Professor	From	27-08-1997
Key words	Numerical Simulation in Environmental Problems, Adaptive Finite Element Methods, Mesh Generation, Mesh Optimization, Convection-diffusion Problems, Isogeometric Analysis		

A.2. Education

PhD	University	Year
Industrial Engineer	Pontificia de Comillas (ICAI)	1981
PhD Industrial Engineering	Las Palmas de Gran Canaria	1989

A.3. JCR articles, h Index, thesis supervised…

1. Periods of six years with positive national evaluation of research: 5 (1988/1993, 1994/1999, 2000/2005, 2006/2011, 2012/2017). Periods of six years of transfer evaluation: 1 (2010-2015).
2. Doctoral thesis directed during the last decade: 3.
3. Sum of times cited: 743 (Scopus), 611 (Web of Science) and 1097 (Researchgate).
4. Average citations per year (2014-2018): 52.8 (Scopus), 50.4 (Web of Science) and 60.2 (Researchgate).
5. Total Q1 publications: 18.
6. h-index: 15 (Scopus), 14 (Web of Science) and 17 (Researchgate).
7. Total publications: 70 (Scopus), 80 (Web of Science), 91 (ORCID) and 129 (Researchgate).

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*

Rafael Montenegro Armas was born in Las Palmas de Gran Canaria, Canary Islands, Spain, in 1958. He received Industrial Engineering degree from ICAI, Pontifical University of Comillas, Madrid, Spain, in 1981 and Ph.D. from the University of Las Palmas de Gran Canaria in 1989, being his advisor Prof. Dr. Luis Ferragut. He is Professor of Applied Mathematics in the University of Las Palmas de Gran Canaria (ULPGC) from 1997. He was director of Mathematics Department from 1990 to 1996, secretary of the University Institute of Intelligent Systems and Numerical Applications in Engineering (SIANI) from 2007 to 2013, director of SIANI from 2014 to 2018, and Head of the Discretization and Applications Division at SIANI. Co-author of more than 200 scientific publications. He has been also organising and scientific committee member of conferences and editorial board member of journal and proceedings. He is member of the Managing Board of the European Community on Computational Methods in Applied Sciences (ECCOMAS) from 2013. He has been leader of important national and international projects with a financial support greater than 1.5 million euros, and he has obtained several awards and recognitions for his research activity (Meshing Maestro in IMR 2007). He gave the opening lecture of the academic course 2015-2016 at the ULPGC. His main research interest is 3-D adaptive finite element mesh generation and its applications to

environmental problems (wind fields, air pollution, solar radiation and oil reservoirs). More specifically, he has been working on meshing from about 35 years: adaptive refinement of triangle and tetrahedral meshes, 3-D Delaunay triangulation, simultaneous untangling and smoothing of tetrahedral, hexahedral and T-meshes, alignment and smoothing of surface triangulations, surface and volume parameterization, meccano method and adaptive T-splines for isogeometric analysis.

Part C. RELEVANT MERITS

C.1. Publications (including books)

1. G. Montero, E. Rodríguez, A. Oliver, J. Calvo, J.M. Escobar, R. Montenegro. Optimisation technique for improving wind downscaling results by estimating roughness parameters. Journal of Wind Engineering and Industrial Aerodynamics, 174, 411-423 (2018).
2. E. Ruiz-Gironés, A. Oliver, G.V. Socorro-Marrero, J.M. Cascón, J.M. Escobar, R. Montenegro, J. Sarrate. Insertion of triangulated surfaces into a meccano tetrahedral discretization by means of mesh refinement and optimization procedures. Int. Journal for Numerical Methods in Engineering, 113, 9, 1488–1506 (2018).
3. J.I. López, M. Brovka, J.M. Escobar, R. Montenegro, G.V. Socorro. Spline parameterization method for 2D and 3D geometries based on T-mesh optimization. Computer Methods in Applied Mechanics and Engineering, 322, 460-482 (2017).
4. M. Brovka, J.I. López, J.M. Escobar, R. Montenegro, J.M. Cascón. A simple strategy for defining polynomial spline spaces over hierarchical T-meshes. Computer-Aided Design, 72, 140-156 (2016).
5. E. Ruiz-Gironés, X. Roca, J. Sarrate, R. Montenegro, J. M. Escobar. Simultaneous untangling and smoothing of quadrilateral and hexahedral meshes using an object-oriented framework. Advances in Engineering Software, 80, 12-24 (2015).
6. A. Oliver, G. Montero, R. Montenegro, E. Rodríguez, J.M. Escobar, A. Pérez-Foguet. Adaptive finite element simulation of stack pollutant emissions over complex terrains, Energy, 49, 47-60 (2013).
7. F. Díaz, G. Montero, J.M. Escobar, E. Rodríguez, R. Montenegro. An adaptive solar radiation numerical model, Journal of Computational and Applied Mathematics, 236, 4611-4622 (2012).
8. M.C. Rivara, P. Rodríguez; R. Montenegro, G. Jorquera. Multithread parallelization of leep-bisection algorithms, Applied Numerical Mathematics, 62, 473-488 (2012).
9. J.M. Escobar, J.M. Cascón, E. Rodríguez, R. Montenegro. A new approach to solid modeling with trivariate T-splines based on mesh optimization, Computer Methods in Applied Mechanics and Engineering, 200, 3210-3222, (2011).
10. L. Ferragut, R. Montenegro, G. Montero, E. Rodríguez, M.I. Asensio, J.M. Escobar. Comparison between 2.5-D and 3-D realistic models for wind field adjustment, Journal of Wind Engineering & Industrial Aerodynamics, 98, 548-558 (2010).
11. G. Montero, J.M. Escobar, E. Rodríguez, R. Montenegro. Solar radiation and shadow modelling with adaptive triangular meshes, Solar Energy, 83, 998-1012 (2009).
12. R. Montenegro, J.M. Cascón, J.M. Escobar, E. Rodríguez, G. Montero. An automatic strategy for adaptive tetrahedral mesh generation, Applied Numerical Mathematics, 59, 2203-2217 (2009).

C.2. Research projects and grants

1. Reference: DEC-2016/21/B/ST6/01539.
Title: Fast Isogeometric Finite Element Method Solver as a Key Component in Supermodeling of Cancer Proliferation.
Organism: National Science Centre, Poland.
Partners: Department of Computer Science, AGH University of Science and Technology, Krakow, Poland, Instituto Universitario SIANI de la ULPGC.
Period: 2017 – 2019. Total amount: 500.000,00 Polish zloty.
Main Researcher: Maciej Paszynski, AGH University, Krakow, Poland.
Number of researchers: 6

2. Reference: CTM2014-55014-C3-1-R
Title: Integration of new methodologies on wind, solar radiation and air quality simulation.
Organism: Secretaría de Estado de Investigación, Desarrollo e Innovación del Ministerio de Economía y Competitividad.
Partners: University of Las Palmas de Gran Canaria (ULPGC), Politechnique University of Cataluña (UPC).
Period: 2015 – 2018. Total amount: 146.410,00 euros
Main Researcher: José María Escobar Sánchez / Gustavo Montero García.
Number of Researchers: 10

3. Reference: 2014-1-ES01-KA203-004956.
Title: Strategic Partnership for the Development of Training Workshops and Modeling Clinic for Industrial Mathematics.
Organism: Programa Erasmus+, Unión Europea, Convocatoria 2014 del Programa Sectorial. Adjudicación de subvenciones de la acción KA200 (educación superior) y KA203 a la ULPGC, como institución coordinadora.
Partners: Universidad de Las Palmas de Gran Canaria y Universidad de Lappeenranta (Finlandia), con otros partners.
Period: 2014 – 2016. Total amount: 188.873,00 euros
Main Researcher: Rafael Montenegro Armas, con profesores de la ULPGC.
Número de investigadores participantes: 4 en la ULPGC.

4. Reference: CGL2011-29396-C03-01
Title: Advances in the simulation of wind fields and solar radiation. Subprojecto of the Coordinate project: Advanced numerical methods for environmental management.
Organism: Secretaría de Estado de Investigación del Ministerio de Ciencia e Innovación.
Partners: University of Las Palmas de Gran Canaria (ULPGC), University of Salamanca (USAL).
Period: 2012 – 2014. Total amount: 107.690,00 euros
Main Researcher: Rafael Montenegro Armas
Number of Researchers: 9

5. Title: Estatistic techniques in weather forecast.
Organism: Red de Excelencia de Energía, Agua y Medio Ambiente, promoted by Universidad de Las Palmas de Gran Canaria (ULPGC) and Instituto Tecnológico de Canarias (ITC).
Partners: ULPGC.
Period: 2009 - 2012 Total amount: 17.500 euros (primer año)
Main Researcher: Rafael Montenegro Armas
Number of Researchers: 11

6. Reference: CGL2008-06003-C03-01/CLI.
Title: Predictor Numerical Models for Environmental Management.
Organism: Plan Nacional de I+D+I, Programa Nacional de Promoción General del Conocimiento, Ministerio de Ciencia e Innovación y FEDER. Partners: University of Las Palmas de Gran Canaria (ULPGC), University of Salamanca (USAL), Politechnique University of Cataluña (UPC).
Period: 2009 - 2011 Total amount: 250.000,00 euros
Main Researcher: Rafael Montenegro Armas
Number of Researchers: 11

7. Reference: UNLP08-3E-010.
Title: Centro de Proceso para Ingeniería Computacional.
Organism: Programa Nacional de Infraestructuras Científico-Tecnológicas dentro del Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica 2008-2011, Ministerios de Educación y Ciencia; y de Industria, Turismo y Comercio, y FEDER.
Partner: Universidad de Las Palmas de Gran Canaria (ULPGC).
Period: 2008 – 2011 Total amount: 183.449,72 euros.
Investigador responsable: Rafael Montenegro Armas.
Número de investigadores participantes: 39

C.3. Contracts

1. Title: Solving linear equations systems module associated to the compositional numerical simulator and its parallelization in distributed and shared memory. (Associated with the project: Compositional numerical simulator for naturally fractured vugular fields with fractal behavior).
Type of contract: Article 83 L.O.U. with the University of Las Palmas de Gran Canaria.
Financing entity: PETROSOFT, sectoral fund CONACYT-SENER-HYDROCARBONS.
Partners: National Autonomous University of Mexico, University of Salamanca, Politechnique University of Cataluña, University of Las Palmas de Gran Canaria and Politechnique University of Tomsk**.**
Period: 01/01/2015 - 12/31/2017. Total amount: 270.000,00 €
Main Researcher: Rafael Montenegro Armas
Number of Researchers: 20

2. Title: Adapted tetrahedral meshes generation for fractured fields. (Associated with the project: Compositional numerical simulator for naturally fractured vugular fields with fractal behavior.)
Type of contract: Article 83 L.O.U. with the University of Las Palmas de Gran Canaria
Financing entity: PETROSOFT, sectoral fund CONACYT-SENER-HYDROCARBONS.
Partners: National Autonomous University of Mexico, University of Salamanca, Politechnique University of Cataluña, University of Las Palmas de Gran Canaria and Politechnique University of Tomsk**.**
Period: 01/05/2012 - 30/11/2014. Total amount: 780.000,00 euros
Main Researcher: Rafael Montenegro Armas
Number of Researchers: 20

C.4. Patents

1. Inventors: J.M. Escobar, J.M. González-Yuste, E. Rodríguez, R. Montenegro, G. Montero.
Title: SUS Code. Available at http://www.dca.iusiani.ulpgc.es/SUScode/
Solicitude number: GC-290-2010. Register number: 00 / 2010 / 6004. Date: 04/06/2010.
Organism: University of Las Palmas de Gran Canaria (ULPGC).
2. Inventors: J.M. Escobar, A. Oliver, E. Rodríguez, R. Montenegro, G. Montero.
Title: Wind3D. Available at http://www.dca.iusiani.ulpgc.es/Wind3D
Solicitude number: GC-96-2012. Register number: 00 / 2012 / 2506. Date: 23/02/2012.
Organism: University of Las Palmas de Gran Canaria (ULPGC).

C.5. Institutional responsibilities

1. Director of the Mathematic Department of the ULPGC (1990-1996).
2. Director of the University Institute SIANI of the ULPGC, (2014-2018).
3. Member of the Spanish Commission for accrediting Full Professors in Engineering and Architecture, ANECA (2011-2014).

C.6. Memberships of scientific societies

1. Member of SeMA, SEMNI, IACM and ECCOMAS.
2. Member of the Managing Board of ECCOMAS, representation of SeMA (from 2013).
3. Member of the General Assembly of ECCOMAS, representation of SeMA (from 2013).

C.7. Editorial Boards

Editorial Board of International Journals: "Neural, Parallel & Scientific Computations", “Advances in Engineering Software”, “ISRN Applied Mathematics”, “Computer Science” and Guest Editor of an issue of the JCR journals “Advances in Engineering Software” and “Computers and Structures”.
Editorial Board / Scientific Committee / Organizing Committee of numerous national and international conferences: CMN, CEDYA, SCTM, ECT, CST, EHF, NP&SC, MS, ICIAM, ICCM, etc.