



CURRICULUM VITAE (CVA)

Part A. PERSONAL INFORMATION		CV date	<u>12/012022</u>
First name	<u>Luis Emilio</u>		
Family name	García Castillo		
Gender (*)	Male	Birth date	Age 54
		08-Nov-1967	
Social Security, Passport, ID number	<u>51385892M</u>		
e-mail	<u>legcasti@ing.uc3m.es</u>	URL Web	
Open Research and Contributor ID (ORCID)(*)	0000-0003-3360-6634		

(*) Mandatory

A.1. Current position

Position	Profesor Titular de Universidad		
Initial date	1-Oct-2005		
Institution	Universidad Carlos III de Madrid		
Departament/Center	<u>Teoría de la Señal y Comunicaciones</u>		
Country	Spain	Teleph. number	916349171
Key words	Computational electromagnetics, HPC (High Performance Computing), Finite Elements, hp adaptivity, Hybrid methods, DDM		

A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
Oct 1997 – Apr 2000	Profesor Titular de Escuela Universitaria Interino, Universidad Politécnica de Madrid
Apr 2000 – Oct 2005	Profesor Titular de Universidad, Universidad de Alcalá

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Doctor Ing. De Telecomunicación	Universidad Politécnica de Madrid	1998
Ingeniero de Telecomunicación	Universidad Politécnica de Madrid	1992

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Luis-Emilio García-Castillo was born in 1967 in Madrid, Spain. He received the degree of Telecommunications Engineer and PhD in Telecommunications Engineering from the Polytechnic University of Madrid in 1992 and 1998 respectively. His doctoral thesis received two awards from the Colegio Oficial de Ingenieros de Telecomunicación and the Universidad Politécnica de Madrid. He is Associate Professor at Universidad Carlos III de Madrid and since September 2019 he is Director of the Master's Degree in Advanced Communications Technologies. He has been Deputy Director of the Department of Signal and Communications Theory at the same university from September 2014 to November 2016. He has made numerous stays at the Electrical Engineering and Computer Science Department

of Syracuse University and at the ICES (Institute for Computational Engineering and Sciences) -formerly called TICAM (Texas Institute for Computational and Applied Mathematics)- of the University of Texas at Austin, Texas, USA, some of them financed with grants obtained in competitive competition for international mobility among which the J. T. Oden Visiting Faculty Fellowship (2007 and 2012). His main research topics focus on high performance computational electromagnetics including finite elements, hp adaptivity, hybrid methods and domain decomposition. He leads the Computational Electromagnetics section of the Group of Radiofrequency, Electromagnetism, Microwave and Antennas, Dep. of Signal Theory and Communications at Universidad Carlos III of Madrid.

He is co-author of the book 'Iterative and Self-Adaptive Finite-Elements in Electromagnetic Modeling' (Artech House, 1998), author of chapters and articles in books, and author of 51 papers in international journals and more than 180 communications in international and national congresses, symposia and workshops. He has been researcher in charge of five projects of the National Plan of I+D+I, one of the Community of Madrid, and of eight projects financed by national and international organizations, among them the Air Force Office of Scientific Research (United States). Additionally, he has participated in more than 25 projects and contracts funded by public and private entities at national and international level. He has been recognized with four 6-year research periods (1994-1999,2000-2005,2006-2011, and 2012-2017) and with one 6-year transfer period (2005-2016).

In his teaching activity, he has directed 23 Final Degree Projects (two of them awarded by the Official Association of Telecommunication Engineers) and 4 Master's Degree Projects. In addition, he is an evaluator of the ANEP and reviewer of different journals of international prestige (including the IEEE Transactions on Antennas and Propagation, IEEE Transactions on Microwave, Theory and Techniques, and Computer Methods in Applied Mechanics and Engineering), and has been secretary of the organizing committee of two URSI national symposia (2002 and 2011) in addition to organizing different workshops in recent years (International Workshop on Terahertz Technologies and Applications, 2011, and Technical Co-Chair of the 7th Workshop on Finite Elements for Microwave Engineering, Antennas, Circuits and Devices, 2004). Finally, he has been the director of 6 FPU and FPI grants of the Spanish Ministry of Education and director of 5 doctoral theses. He is the current director of 2 theses in advanced stage of completion.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

Six-year research periods: 4; date of last period granted: January 2017.

1. **Journal:** A. Amor-Martin, L. E. Garcia-Castillo, y J.-F. Lee. "Study of Accuracy of a Non-Conformal Finite Element Domain Decomposition Method." *Journal of Computational Physics*, 429(109989), mar 2021. doi: 10.1016/j.jcp.2020.109989.(Q1)
2. **Journal:** V. Darrigrand, D. Pardo, T. Chaumont-Frelet, I. Gómez-Revuelto, and L.E. García-Castillo. "A Painless Automatic hp-Adaptive Strategy for Elliptic Problems." *Finite Elements in Analysis and Design*, 2020. doi: 10.1016/j.finel.2020.103424 (Q1)
3. **Journal:** K. Atia-Abdalmalak, G. Santamaria-Botello, S. Llorente-Romano, A. Rivera-Lavado, D. S. Vargas, M. Pantaleev, and L. E. Garcia-Muñoz. "Ultra-wideband Circular Polarization Feed for Radio Astronomy Applications Based on a Conical Log-Spiral Topology." *IEEE Transactions on Antennas and Propagation*, 2019. doi:10.1109/TAP.2019.2949700 (Q1).
4. **Journal:** A. A. Althuwayb, K. A. Abdalmalak, C. S. Lee, , G. Santamaria-Botello, L. E.

García-Castillo, D. Segovia-Vargas, y L. E. García-Munoz. "3-D-Printed Dielectric Resonator Antenna Arrays Based on Standing-Wave Feeding Approach." *IEEE Antennas and Wireless Propagation Letters*, 18(10):2180–2183, Oct. 2019. (Q1)

5. **Journal:** D. García-Doñoro y L. E. García-Castillo. "Non-Standard Schwarz Domain Decomposition Method for Finite Element Mesh Truncation of Infinite Periodic Structures." *IEEE Transactions on Antennas and Propagation*, 66(11):6179–6190, 2018. doi:10.1109/TAP.2018.2866532 (Q1).
6. **Journal:** A. Amor-Martin and L. E. García-Castillo. "Second-Order Nédélec Curl-Conforming Prismatic Element for Computational Electromagnetics." *IEEE Transactions on Antennas and Propagation*, 64(10):4384–4395, Oct. 2016 (Q1).
7. **Journal:** R. M. Barrio-Garrido, L. E. García-Castillo, I. Gómez-Revuelto, and M. Salazar-Palma. "Self-Adaptive hp Finite Element Method with Iterative Mesh Truncation Technique Accelerated with Adaptive Cross Approximation." *Computer & Mathematics with Applications*, 71(10):1911–1932, May 2016 (Q1).
8. **Journal:** I. Gomez-Revuelto, L. E. Garcia-Castillo, y D. Pardo. "High-Accuracy Adaptive Modeling of the Energy Distribution of a Meniscus-Shaped Cell Culture in a Petri Dish." *Journal of Computational Science*, 9:143–149, 2015. <http://dx.doi.org/10.1016/j.jocs.2015.04.027> (Q2)
9. **Journal:** Gómez-Revuelto, I.; García-Castillo, L.E.; Llorente-Romano, S.; Pardo-Zubiaur, D., 2012, A three-dimensional self-adaptive hp finite element method for the characterization of waveguide discontinuities, *Computer Methods in Applied Mechanics and Engineering*, 249-252, 62- 74, 0045-7825 (Q1).
10. **Book:** García-Castillo, L.E.; Salazar-Palma, M.; Sarkar, T.K.; Roy, T.; Djordjevic, A.R., 1998, *Iterative and Self-Adaptive Finite-Elements in Electromagnetic Modeling*, Artech House, 0-89006-895-X

C.2. Congress (over 180 contributions)

C.3. Research projects

1. PID2019-109984RB-C41, Radiómetros basados en conversión superior fotónica en rango de submilimétricas de próxima generación para observación de la tierra, Ministerio de Ciencia e Innovación. Daniel Segovia Vargas, Luis E. García Muñoz. 01/06/2020-31/05/2023. 233.651€. Researcher.
2. TEC2016-80386-P, Simulador Electromagnético para Entorno HPC, Ministerio de Economía y Competitividad (MINECO), Plan Nacional de I+D+I, García-Castillo, L.E., Universidad Carlos III de Madrid, 30/12/2016-29/12/2019, 119.427€, Principal Investigator.
3. S2013/ICE-3004, DIFRAGEOS-CM. Desarrollos instrumentales fotónicos y de radiofrecuencia y aplicación a técnicas experimentales de geodesia espacial (DIFRAGEOS), CAM-Consejería de Educación-Dirección General de Universidades e Investigación, Convocatoria de Macrogrupos, Carpintero del Barrio, G., Salazar-Palma, M., Universidad Carlos III de Madrid, 01/10/2014-30/09/2016, 600.000€, Researcher.
4. RTC-2014-2380-4, Miniaturización de antenas, Ministerio de Economía y Competitividad, programa Retos Colaboración, Segovia-Vargas, D., Universidad Carlos III de Madrid, 28/01/2014-31/12/2016, 282.512,85€, Researcher.

5. TEC2013-47753-C3-2-R, Desarrollo de un sistema integrado de comunicaciones de alta tasa de datos en frecuencia de THz, Ministerio de Economía y Competitividad, Programa Retos de la Sociedad, Segovia-Vargas, D., University Carlos III of Madrid, 01/01/2014-31/12/2016, 238.854€, Researcher.
6. TEC2010-18175, Análisis de Estructuras Periódicas Finitas Regulares e Irregulares mediante Técnicas de Descomposición de Dominios en Paralelo con Adaptatividad hp Automática, Ministerio de Ciencia e Innovación, Plan Nacional de I+D+I, García-Castillo, L.E., University Carlos III of Madrid, 01/01/2011-31/12/2014, 168.432€, Principal Investigator.
7. FA8655-07-1-3041, EOARD-"Self-Adaptive Electromagnetic Solver using hp-Finite Elements for the Analysis of the Scattering and Radiation of Electromagnetic Waves", European Office of Aerospace Research, convocatoria competitiva, García-Castillo, L.E., University Carlos III of Madrid, 01/04/2007-31/03/2008, 25.000\$, Principal Investigator.

C.4. Contracts, technological or transfer merits

Six-year transfer periods: 1; date of last period granted: November 2018.

1. Simulación electromagnética de estructuras en horno de microondas, LEKUE S.L., García-Castillo, L.E., University Carlos III of Madrid, 22/10/2018-21/04/2019, 4.800€. Principal Investigator.
2. Massive MIMO Antenna in 700 MHz band project, HUAWEI, Segovia-Vargas, D. University Carlos III of Madrid, 01/11/2019-01/01/2021, 151.500€. Researcher
3. RCAF Radar Cross Section Offset, Pedido nº E 9777945 Q, Posición 00001, AIRBUS GROUP DEFENCE AND SPACE S.A.U., García-Castillo, L.E., Universidad Carlos III de Madrid, 29/01/2016-28/01/2017, 31.052,32€. Principal Investigator.
4. Contrato marco para la prestación de servicios tecnológicos, el área de Simulación Numérica de Dinámica de Fluidos, INDRA SISTEMAS, S.A., García-Castillo, L.E., Universidad Carlos III de Madrid, 15/10/2014-14/10/2015, 14.000€. Principal Investigator.
5. Simulación electromagnética de antenas, INDRA SISTEMAS, S.A., García-Castillo, L.E., Universidad Carlos III de Madrid, 20/12/2013- 19/12/2014, 6.665€. Principal Investigator.
6. Numerical Methods for Antenna Analysis and Design: A New Full Wave Electromagnetic Simulator (Part 2), OHRN Enterprises, Inc., Dewitt, NY, EEUU, Salazar-Palma, M., Universidad Carlos III de Madrid, 01/06/2012-31/05/2014, 78.347,81€. Researcher.
7. Desarrollo Industrial de una Antena Cuatribanda para Estación Base de Telefonía Móvil, KAVVERI TELECOM ESPAÑA S.L (20.000€), SENER TAFS, S.A.U. (40.000€). Daniel Segovia Vargas, Universidad Carlos III de Madrid, 01/01/2011-31/07/2011 Researcher.