MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CURRICULUM VITAE (maximum 4 pages)

CV date	27-09-2018

Part A. PERSONAL INFORMATION

First and Family name	Miguel Ángel Piñar González		
Social Security, Passport, ID number	25957107C	Age	60
Researcher numbers	Researcher ID	J-3941-2013	
	Orcid code	0000-0001-6210-4567	

A.1. Current position

Name of University/Institution	Universidad de Granada			
Department	Matemática Aplicada			
Address and Country	18071 Granada, Spain			
Phone number	958249956	E-mail	mpinar@ugr.es	
Current position	Catedrático Universidad		From	08-12-2010
Espec. cód. UNESCO	120202, 120223			
Palabras clave	Approximation Theory, Special Functions,Orthogonal Polynomials			

A.2. Education

PhD	University	Year
Mathematics	Universidad de Granada	1992

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

JCR articles in Q1 (Source WoS): 15 h-index (Source WoS): 10
Sum of Times Cited (WoS): 309 Average citations per item (last 5 years): 88 / 5 = 17.6
Average citations per item (WoS): 309/55 = 5.62
Thesis supervised (last 10 years): 1
Granted Six-year Research Periods: 4
Latest Granted Six-year Research Period: 2010-2015

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

My teaching and research activity has been developed at Universidad de Granada, where I am a professor since 1982 and Full Professor since 2010. The main topic of my research is the theory of *Non-standard Orthogonal Polynomials*. Until 2004 we worked in the study of univariate orthogonal polynomials associated with scalar products involving derivatives (the so called Sobolev orthogonal polynomials) and matrix polynomials. Since 2005 we have considered orthogonal polynomials in several variables. Specifically, we study properties of these polynomials, which are only partially known in the literature: differential properties (classical / semiclassical character), algebraic properties (relations between different families, zeros, cubature formulae), modifications of measures (Christoffel, Geronimus, Uvarov, Sobolev), asymptotic, etc.
My research activity has been developed in various groups and research projects funded by the Spanish Government and Junta de Andalucía. I have been positively evaluated by the evaluation agencies of the Spanish government and the Andalusian university system. I count on the positive evaluation of four six-years periods of investigation (last period 20010-2015) and six five-years teaching periods.
Since its creation, I am a member of the Orthogonality and Applications research group (GOYA, FQM 384), recognized as a consolidated group by the Junta de Andalucía.
In the last ten years, I have been Main Research of four uninterrupted research projects of the national R + D plan (MTM2005-08648-C02-02, MTM2008-06689-C02-02, MTM2011-28952-C02- 02, MTM2014-53171-P). I have participated as a researcher in research projects of previous calls for the national R + D plan, two excellence projects funded by Junta de Andalucía and two research projects of the Brazilian Hispano Cooperation Plan jointly funded by the MEC and the Brazilian government, all of them are related to the field of orthogonal polynomials and their applications.

In the Web of Science, there are 58 publications with a total of 309 references. We will highlight that after 2013, I have published 14 articles in indexed journals, 8 of which are in the first quartile. In recent years, there has been a clear improvement in the quantity and quality of the published works, as well as in the internationalization of our research team.
I have regularly participated in national and international conferences related to the field Orthogonal Polynomials and Approximation Theory, where I have presented a considerable amount of communications; many of them were invited talks.
I have made research stays in numerous national and international centers, among which I want to highlight a four-month stay at the University of Oregon in Eugene, as part of a Salvador de Madariaga scholarship. We regularly receive national and international researchers of recognized prestige allowing a fluid exchange of information and an internationalization of the team that we can appreciate in the collaborations of the most recent publications.
Other merits: Head of the Department of Applied Mathematics, member of the IEMath in Granada, referee activities, AMS reviewer, and membership in international mathematical societies (AMS, SIAM).

Part C. RELEVANT MERITS

C.1. Publications (including books)

1. M. A. Piñar, Y. Xu, Best polynomial approximation on the unit ball *IMA Journal of Numerical Analysis,* **38,** 3, (2018), 1209-1228, JCR Impact Factor: 1.837 (2017). Position 37/252 (Q1). Category: Mathematics, Applied.

2. F. Marcellán, M. Marriaga, T. E. Perez, M. A. Piñar, On bivariate classical orthogonal polynomials, *Appl. Math. Comput.* **325** (2018), 340-357. JCR Impact Factor: 2.300 (2017). Position 21/252 (Q1). Category: Mathematics, Applied.

3. M. Marriaga, T. E. Pérez, M. A. Piñar, Three term relations for a class of bivariate orthogonal polynomials. *Mediterr. J. Math.* **14** (2017), Art. 54, 26 pp. JCR Impact Factor: 1.000 (2017). Position: 68/309 (Q1). Category: Mathematics. Times cited: 1 (WoS).

4. A. M. Delgado, L. Fernández, D. S. Lubinsky, T. E. Pérez, M. A. Piñar, Sobolev orthogonal polynomials on the unit ball via outward derivatives. *J. Math. Anal. Appl.* **440** (2016), 716-740. JCR Impact Factor: 1.064 (2016). Position 53/310 (Q1). Category: Mathematics. Times cited: 4 (WoS)..

5. L. Fernández, F. Marcellán, T. E. Pérez, M. Piñar, Y. Xu, Sobolev orthogonal polynomials on product domains. *J. Comput. Appl. Math.* **284** (2015), 202-215. JCR Impact Factor: 1.266 (2015). Position 59/257 (Q1). Category: Mathematics, Applied. Times cites: 7 (WoS).

6. H. Dueñas, L. Garza, M. Piñar, A higher order Sobolev-type inner product for orthogonal polynomials in several variables. *Numer. Algorithms* **68** (2015), 35-46. . JCR Impact Factor: 1.477 (2014). Position 46/251 (Q1). Category: Mathematics, Applied. Times cites: 2 (WoS)

7. A. M. Delgado, T. E. Pérez, M. A. Piñar, Sobolev-type orthogonal polynomials on the unit ball, *Journal of Approximation Theory* **170**, (2013) 94-106. JCR Impact Factor: 0.755 (2013). Position 59/299 (Q1). Category: Mathematics. Times cited: 1 (WoS).

8. T. E. Pérez, M. A. Piñar, Y. Xu, Weighted Sobolev orthogonal polynomials on the unit ball, *Journal of Approximation Theory* **171**, (2013) 84-104 JCR Impact Factor: 0.755 (2013). Position 59/299 (Q1). Category: Mathematics. Times cited: 7 (WoS).

9. L. Fernández, T. E. Pérez, M. A. Piñar, Orthogonal polynomials in two variables as solutions of higher order partial differential equations, Journal of Approximation Theory 163 (2011), 84-97. JCR Impact Factor: 0.681 (2011). Possition 103/289 (Q2). Category: Mathematics. Times cited: 7 (WoS).

10. R. Lamblén, J. MacCabe, M. A. Piñar, A. S. Ranga (2010), Szegö type polynomials and para-orthogonal polynomials, *Journal of Mathematical Analysis and Applications* **370** (2010) 30-41**.** JCR Impact Factor: 1.174 (2010). Position 33/279 (Q1). Category: Mathematics. Times cited: 4 (WoS).

C.2. Research projects and grants

Funded by Spanish Government:

1. **MTM2014-53171-P**: Propiedades de los polinomios ortogonales en varias variables. Aplicaciones. Funding Entity: Ministerio de Economía y Competitividad. Lead researcher: Miguel Piñar González (Universidad de Granada). Granted amount: 35.090 €. Start date: 01/01/2015, end date: 31/12/2018. Role: Lead researcher.
2. **MTM2011-28952-C02-02**: Polinomios ortogonales multivariados. Propiedades estructurales y aplicaciones. Funding Entity: Ministerio de Ciencia e Innovación and the European Regional Development Fund (ERDF). Lead researcher: Miguel Piñar González (Universidad de Granada). Granted amount: 33.275 €. Start date: 01/01/2012, end date: 31/12/2015. Role: Lead researcher.
3. **MTM2008-06689-C02-02**: Polinomios ortogonales multivariados. Propiedades estructurales y aplicaciones. Funding Entity: Ministerio de Ciencia e Innovación and the European Regional Development Fund (ERDF). Lead investigator: Miguel Piñar González (Universidad de Granada). Granted amount: 31.702 €. Start date: 01/01/2009, end date: 31/12/2011. Role: Lead researcher.

Excellence project funded by Junta de Andalucía

4. **P11-FQM-7276**: Teoría de la aproximación, funciones especiales y modelos matemáticos: de la teoría a las aplicaciones oftalmológicas. Funding Entity: Junta de Andalucía. Lead researcher: Andrei Martínez Finkelshtein (Universidad de Almería). Granted amount: 239.478,30 €. Start date: 30/04/2013, end date: 29/04/2017. Role: Full-time researcher.
5. P09-FQM-4643: Orthogonality, approximation and quantum complexity: theory and scientific and technological applications. Funding entity: Junta de Andalucía, call 2009. Lead researcher: Antonio Durán Guardeño (Univ. Sevilla). Granted amount: 293.939,68 €. Start date: 01/01/2010, end date: 12/31/2012. Role: Full time researcher.

International research project

6. **PHB2007-0078-PC/CAPES-Brasil 160/08:** Polinomios Ortogonales, Funciones Especia-les y Aplicaciones / Polinômios Ortogonais, Funções Especiais e Aplicações. Funding entity: Ministerio de Educación y Ciencia (Spain) and Brazilian Government (CAPES), call 2006. Leaders: Eduardo Godoy Malvar (Univ. Vigo)/ Dimitar K. Dimitrov (UNESP, Brazil). Granted amount: 9.050€ / 6.050€. Star date: 01/01/2008, end date: 12/31/2011. Role: Full time researcher/Researchers host.

Research Group of Junta de Andalucía (Spain)

7. FQM-384: Orthogonality and Applications. Funded entity: Junta de Andalucía, call 2017. Lead researcher: Teresa E. Pérez. Granted amount: 4.800€. Role: Full time researcher.

Collaborative Networks

8. MTM2015-68988-REDT: Orthonet. Spanish Network on Orthogonal polynomials and applications. Funding entity: Ministerio de Economía y Competitividad, call 2015. Leader: Antonio Durán (Univ. Sevilla). Granted amount: 24.000€. Start date: 01/01/2016, end date: 12/31/2017. Role: Full time researcher.
9. MTM2017-90694-REDT: Orthonet. Spanish Net on Orthogonal polynomials and applications. Funding entity: Ministerio de Economía y Competitividad, call 2015. Leader: Óscar Ciaurri (Univ. La Rioja). Granted amount: 12.000€. Start date: 07/01/2018, end date: 06/30/2020. Role: Full time researcher.

C.3. Contracts

C.4. Patents

C.5, C.6, C.7… (e. g., Institutional responsibilities, memberships of scientific societies…)

Doctoral dissertations

1. M. Marriaga, On semiclassical families of bivariate orthogonal polynomials. Coadvisers: F. Marcellán, T. E. Pérez. Univ. Carlos III. Defense date: sep 2017.

Master thesis

1. Nadia Huerta Sánchez, Aplicaciones de los polinomios de Zernike-Uvarov en la detección de problemas visuales, TFM, Máster Fisymat, 2018
2. Gema Alhama Salés, Polinomios ortogonales bivariados de Koornwinder, TFM, Máster en Matemáticas, UGR, 2017.
3. Laura Estrella Luque, Polinomios ortogonales clásicos en dos variables, TFM, Máster en Matemáticas, UGR, 2017.
4. M. Marriaga, Polinomios de Koornwinder en dos variables, TFM, máster Física y Matem., UGR, 2012. Codirección: T. E. Pérez.

.

Scientific Events organization:

1. Special session “Teoría de Aproximación y Funciones especiales de la Física-Matemática” in the RSME 2015 conterence, Granada, Feb 2-6, 2015.
2. Mini-symposium “Orthogonal Polynomials in Approximation Theory”, in “V Jaén Conference on Approximation Theory”, Úbeda (Jaén), Jul 2014.
3. Workshop “Generalized Special Functions of Mathematical Physics”, Granada, Feb , 2012.

Other merits

Head of “Departamento de Matemática Aplicada” in Universidad de Granada from Feb 8, 2017.
Evaluator for the National Agency ANEP.
Member of the “Juan de la Cierva” and “Ramón y Cajal” grants evaluation commitees (2018)

Referee for JCAM, JAT, MJM, MAA, NA, RM, etc.

Rewiever of the AMS.

Participation (as invited speaker/speaker/poster presentation) in more than 50 international conferences related to Orthogonal polynomials and Approximation Theory.

Twenty invited seminars in national and international institutions. Seven research stays in national and international institutions of at least one month.