

## Personal data

Name	Ignacio
Family name	Márquez Albés
Date of birth	26/12/1993
Place of birth	Vigo (Pontevedra, Spain)
Citizenship	Spain

## Education

15/01/2021	PhD in Mathematics, University of Santiago de Compostela, Spain Distinctions: <i>Cum laude</i> , International Doctorate
11/02/2020	MSc in Teacher training in Mathematics and Informatics, Valencian International University, Spain
26/07/2016	MSc in Mathematics, University of Santiago de Compostela, Spain
30/07/2015	BSc in Mathematics, University of Santiago de Compostela, Spain

## Employment history

01/01/2022 - present	Postdoctoral fellow at the Institute of Mathematics of the Czech Academy of Sciences, Czech Republic
01/07/2021 - 21/11/2022	Postdoctoral fellow at University of Santiago de Compostela, Spain
18/06/2021 - 30/06/2021	Researcher at University of Santiago de Compostela, Spain
26/02/2021 - 30/06/2021	Substitute teacher for the BSc in Economics and Business studies at University of Santiago de Compostela, Spain
31/07/2017 - 15/01/2021	Predocctoral fellow at University of Santiago de Compostela, Spain
04/01/2016 - 30/07/2017	Research assistant at University of Santiago de Compostela, Spain

## Teaching experience

Scholar year: 2020/21	<i>Current Topics in Mathematical Research</i> , 1 hour MSc in Mathematics, University of Santiago de Compostela, Spain <i>Mathematics for Economists II</i> , 102 hours BSc in Economics and Business studies, University of Santiago de Compostela, Spain
Scholar year: 2019/20	<i>Vector Calculus and Lebesgue Integration</i> , 30 hours BSc in Mathematics, University of Santiago de Compostela, Spain <i>Differentiation of Functions of Several Real Variables</i> , 28 hours BSc in Mathematics, University of Santiago de Compostela, Spain
Scholar year: 2018/19	<i>Continuity and Derivability of Functions of One Real Variable</i> , 28 hours BSc in Mathematics, University of Santiago de Compostela, Spain <i>Introduction to Mathematical Analysis</i> , 32 hours BSc in Mathematics, University of Santiago de Compostela, Spain

Scholar year: 2017/18

*Integration of Functions of One Real Variable*, 28 hours

BSc in Mathematics, University of Santiago de Compostela, Spain

*Introduction to Mathematical Analysis*, 32 hours

BSc in Mathematics, University of Santiago de Compostela, Spain

## Research and scientific activities

### Invited lectures

*Obtaining the adjoint first order linear equation with Stieltjes derivatives*  
3<sup>rd</sup> International Online Seminar on Generalized Integration and applications, Puebla (México), 19/07/2022

*Adjoint first order linear equations with Stieltjes derivatives and Lagrange's identity*

International Meeting on Differential Equations and their Applications, Łodz (Poland), 01/06/2022

*Lagrange's identity for first order linear differential equations with Stieltjes derivatives*

Drakhlin's Seminar on Functional Differential Equations, Ariel (Israel), 09/03/2022

*Differential problems with Stieltjes derivatives*

2<sup>nd</sup> International Online Seminar on Generalized Integration and applications, Puebla (México), 21/10/2021

*Some uniqueness results for differential equations with Stieltjes derivatives*  
Seminar of Differential Equations and Functional Analysis, Santiago de Compostela (Spain), 23/07/2018

*Existence and uniqueness results for Stieltjes differential equations*

Seminar on Differential Equations and Integral Theory, Praha (Czech Republic), 16/07/2018

*On Displacements and Stieltjes derivatives*

Seminar on Differential Equations and Integral Theory, Praha (Czech Republic), 26/04/2018

*Some existence principles for Stieltjes Differential Equations*

Seminar of Differential Equations and Functional Analysis, Santiago de Compostela (Spain) 30/03/2017

*Ecuaciones diferenciales con derivadas de Stieltjes*

Research Initiation Seminar 2016-2017, Santiago de Compostela (Spain), 30/03/2017

### Contributed talks

*Second order Stieltjes derivatives and differential equations*

Conference on Differential Equations and Their Applications (EQUADIFF 15), Brno (Czech Republic), 14/07/2022

*Stieltjes differential equations, Dynamic equations and populations*

International Conference on Differential and Difference Equations and Applications 2019, Lisboa (Portugal), 02/07/2019

*Ecuaciones diferenciales de Stieltjes y poblaciones*

V Encontro Mocidade Investigadora, Santiago de Compostela (Spain), 13/06/2017

### Organizing committee

Research Initiation Seminar 2019-2020 of the Institute of Mathematics of the University of Santiago de Compostela, Santiago de Compostela (Spain)

Research Initiation Seminar 2018-2019 of the Institute of Mathematics of the University of Santiago de Compostela, Santiago de Compostela (Spain)

International Conference on Nonlinear Analysis and Boundary Value Problems 2018, Santiago de Compostela (Spain)

**Editorial work**

Proceedings for the Research Initiation Seminar 2019-2020 of the Institute of Mathematics of the University of Santiago de Compostela, editor

Proceedings for the Research Initiation Seminar 2018-2019 of the Institute of Mathematics of the University of Santiago de Compostela, editor

**Reviewer**

*Boundary Value Problems*, 1 manuscript

*Journal of Mathematical Analysis and Applications*, 1 manuscript

*Mathematics*, 1 manuscript

*Rendiconti del Circolo Matematico di Palermo Series 2*, 2 manuscripts

**Research visits and scientific experience**

**Research visits**

Institute of Mathematics of the Academy of Sciences of Czech Republic, Praha (Czech Republic), 01/09/2021 - 31/08/2022  
Host: Dr. Milan Tvrdý

Institute of Mathematics of the Academy of Sciences of Czech Republic, Praha (Czech Republic), 13/04/2018 - 13/07/2018  
Host: Dr. Giselle Antunes Monteiro

**Projects**

CONSOLIDACIÓN 2019 GRC GI-1561 *Ecuaciones diferenciais non lineares*, reference: ED431C 2019/02

Funding organization: Consellería de Educación e Universidade e Formación Profesional da Xunta de Galicia (Spain)  
Participation: researcher, 01/01/2019 - 20/11/2022

*Ecuaciones diferenciales ordinarias y funcionales*, EXCELENCIA 2016, reference: MTM2016-75140-P

Funding organization: Agencia Estatal de Investigación de España (Spain)  
Participation: researcher, 30/12/2016 - 29/12/2020

*Ecuaciones diferenciales ordinarias no lineales*, EXCELENCIA 2013, reference: MTM2013-43014-P

Funding organization: Ministerio de Economía y Competitividad de España (Spain)  
Participation: researcher, 04/01/2016 - 31/12/2017

**Postdoctoral grants**

*Axudas de apoio á etapa de formación posdoutoral nas universidades do Sistema universitario de Galicia, nos organismos públicos de investigación de Galicia e noutras entidades do Sistema de I+D+i galego*, reference: ED481B-2021-074

Funding organization: Xunta de Galicia (Spain)

**Predocctoral grants**

*Axudas de apoio á etapa de formación predoutoral nas universidades do Sistema universitario de Galicia, nos organismos públicos de investigación de Galicia e noutras entidades do Sistema de I+D+i galego*, reference: ED481A-2017/095

Funding organization: Xunta de Galicia (Spain)

## List of publications

### Preprints

1. I. Márquez Albés, A. Slavík, *The logistic equation in the context of Stieltjes differential and integral equations*, submitted to Electron. J. Qual. Theory Differ. Equ.  
<https://as.matfyz.cz/papers/logistic-equation.pdf>
2. F.J. Fernández, I. Márquez Albés, F.A.F. Tojo, *Consequences of the product rule in Stieltjes differentiability*, submitted to Rev. Real Acad. Cienc. Exactas Fis. Nat. Ser. A-Mat.  
<https://arxiv.org/abs/2205.10090>
3. F.J. Fernández, I. Márquez Albés, F.A.F. Tojo, *The Wronskian and the variation of parameters method in the theory of linear Stieltjes differential equations of second order*, submitted to Commun. Contemp. Math.  
<https://arxiv.org/abs/2206.10855>

### Publications

4. I. Márquez Albés, A. Slavík, M. Tvrdý, *Duality for Stieltjes differential and integral equations.*, J. Math. Anal. **519**(1) (2023), 126789
5. F.J. Fernández, I. Márquez Albés, F.A.F. Tojo, *On first and second order linear Stieltjes differential equations.* J. Math. Anal. **511**(1) (2022), 126010
6. R. López Pouso, I. Márquez Albés, J. Rodríguez-López, *Transversality conditions for the existence of solutions of first-order discontinuous functional differential equations.* Topol. Methods Nonlinear Anal. **58**(1) (2021), 1-17
7. I. Márquez Albés, F.A.F. Tojo, *Existence and uniqueness of solution for Stieltjes differential equations with several derivators.* Mediterr. J. Math. **18**(181) (2021), 1-31
8. I. Márquez Albés, *Notes on the linear equation with Stieltjes derivatives.* Electron. J. Qual. Theory Differ. Equ. **82** (2021), 1-18
9. I. Márquez Albés, G.A. Monteiro, *Notes on the existence and uniqueness of solutions of Stieltjes differential equations.* Math. Nachr. **294** (2021), 794-814
10. R. López Pouso, I. Márquez Albés, J. Rodríguez-López, *Solvability of non-semicontinuous systems of Stieltjes differential inclusions and equations.* Adv. Difference Equ. **2020**(227) (2020), 1-14
11. I. Márquez Albés, F.A.F. Tojo, *Displacement Calculus.* Mathematics **8**(3) (2020), 1-30
12. R. López Pouso, I. Márquez Albés, *Existence of extremal solutions for discontinuous Stieltjes differential equations.* J. Inequal. Appl. **2020**(47) (2020), 1-21
13. R. López Pouso, I. Márquez Albés, *Resolution methods for mathematical models based on differential equations with Stieltjes derivatives.* Electron. J. Qual. Theory Differ. Equ. **72** (2019), 1-15
14. R. López Pouso, I. Márquez Albés, *Systems of Stieltjes Differential Equations with Several Derivators.* Mediterr. J. Math. **16**(2) (2019), 1-17
15. R. López Pouso, I. Márquez Albés, G.A. Monteiro, *Extremal solutions of systems of measure differential equations and applications in the study of Stieltjes differential problems.* Electron. J. Qual. Theory Differ. Equ. **38** (2018), 1-24

16. R. López Pouso, I. Márquez Albés, *General existence principles for Stieltjes differential equations with applications to mathematical biology*. J. Differential Equations **264**(8) (2018), 5388–5407