



KATHERINE CASTRO DÍAZ
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Contact Info

Location: University of Granada, Granada-Spain, Faculty of Science, office 4, ground floor.

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Education

- 2011 UNIVERSITY OF GRANADA, SPAIN.
PhD student in Physics and Mathematics, 2015.
Advisors: Manuel María Ritoré Cortés and Manuel César Rosales Lombardo.
Isoperimetric Inequalities on Metric Measure Spaces.
- 2009 UNIVERSITY OF GRANADA, SPAIN.
Master of Science in Mathematics, December 2010.
Advisor: Antonio Ros Mulero.
Hipersuperficies mínimas y de curvatura media constante con frontera libre (Minimal and constant mean curvature hypersurfaces with free boundary).
- 2003 UNIVERSITY OF VALLE, COLOMBIA.
Bachelor of Science in Mathematics, April 2009.
Advisor: Gonzalo García Camacho.
El primer valor propio no cero del problema de Steklov (The first non-zero eigenvalue of Steklov Problem).

Awards and Scholarships

- 2011 Training of research staff program fellow, PhD student in Physics and Mathematics, Ministry of Science and Innovation, Government of Spain.
- 2010 With honors (Outstanding Thesis), Master of Science in Mathematics, University of Granada, Spain.
- 2009 With honors (Magna Cum Lauden Thesis), Bachelor of Science in Mathematics, University of Valle, Colombia.

Research Interests

Riemannian Manifolds.
Minimal Surfaces.
Constant Mean Curvature.
Manifolds With Density.
Isoperimetric Problems.

Publications

- Accepted Katherine Castro and César Rosales, Free boundary stable hypersurfaces in manifolds with density and rigidity results, *Journal of Geometry and Physics*, 2014.
- Preprint K. Castro, M. Ritoré and C. Rosales, *Stable constant mean curvature surfaces with density that minimize area*, 2012.

Attending Events

- 2013 Segundo Congreso de Jóvenes Investigadores RSME, Sevilla, September.
- 2013 Geometric Measure Theory and Optimal Transport, Trieste, July-August.
- 2012 Lectures on Stable Minimal Surfaces, Granada, September.
- 2012 Superficies Propiamente Embebidas de Curvatura Media Constante en \mathbb{R}^3 , Granada, September.
- 2012 Geometry of Minimal Surfaces Via Integrable Systems, Granada, September.

- 2012 Geometry Variational Problems, Granada, June.
- 2012 CMC and Minimal Surfaces, Granada, May.
- 2012 Workshop on the Willmore Conjecture, Granada, May.
- 2012 Investidura Doctor Honoris Causa del Prof. Manfredo P. Do Carmo, Murcia, May.
- 2011 Jornada de Geometría, Granada, December.
- 2011 2nd European Young and Mobile Workshop: Geometric Analysis and Partial Differential Equations, Granada, November.
- 2011 VI International Meeting on Lorentzian Geometry, Granada 2011, Granada, September.
- 2011 International Conference on Surface Theory, Sevilla, April.
- 2011 Doc-Course Submanifold Theory and Applications, Sevilla, March-April.
- 2011 Spanish-Japanese Workshop on Differential Geometry, Granada, February.
- 2009 XVII Congreso Colombiano de Matemáticas CCM2009, Cali, August.
- 2008 Taller de Teoría de Juegos, Bogotá, February.
- 2007 Seventh American School in Differential Equations and Nonlinear Analysis, Cartagena de Indias, July.
- 2006 EMALCA Colombia, Primera Escuela Colombiana de Matemáticas, Socorro, October.
- 2006 XII Escuela Regional de Matemáticas, Pereira, September.
- 2006 International Conference in Memory of José Escobar "Chepe", Santiago de Cali, January.
- 2005 XI Escuela Regional de Matemáticas, Santiago de Cali, June.
- 2004 Cita de Enero en Ecuaciones Diferenciales, Santiago de Cali, January 2004.

Computer skills

- OS Expert user of Linux, advanced user Windows.
- Tools Extensive experience using and programming Mathematica, MatLab, MuPad, Python.

Language skills

- Spanish Native speaker.
- English Good ability to read and listen.

Training in differential geometry and differential equations

- Univalle [Differential Equations.](#)
- Univalle [Curves and Surfaces.](#)
- Univalle [Partial Differential Equations on the following page.](#)
- Univalle [Operator, Semigroups and Differential Equations.](#)
- Univalle [Differential Geometry.](#)
- Univalle [Modern Geometry.](#)
- UGR [Simple Geometry Problems with Applications to Physics.](#)
- UGR [Geometric Properties of the Surfaces of Separation Between Fluids.](#)
- UGR [Minimal Surfaces and Geometric Variational Problems.](#)
- UGR [Calculus of Variations and Optimization.](#)
- UGR [Geometry of Relativistic Space-Times.](#)
- UGR [Symmetries and Lie Groups in Mathematical Physics.](#)

Teaching positions performed

- 2011 University of Granada, Granada-Spain, fellow FPI, September 2015.
- 2004 University of Valle, Santiago de Cali-Colombia, assistant professor, July 2009.
- 2003 Javeriana Pontifical University, Santiago de Cali-Colombia, assistant professor, June 2004.

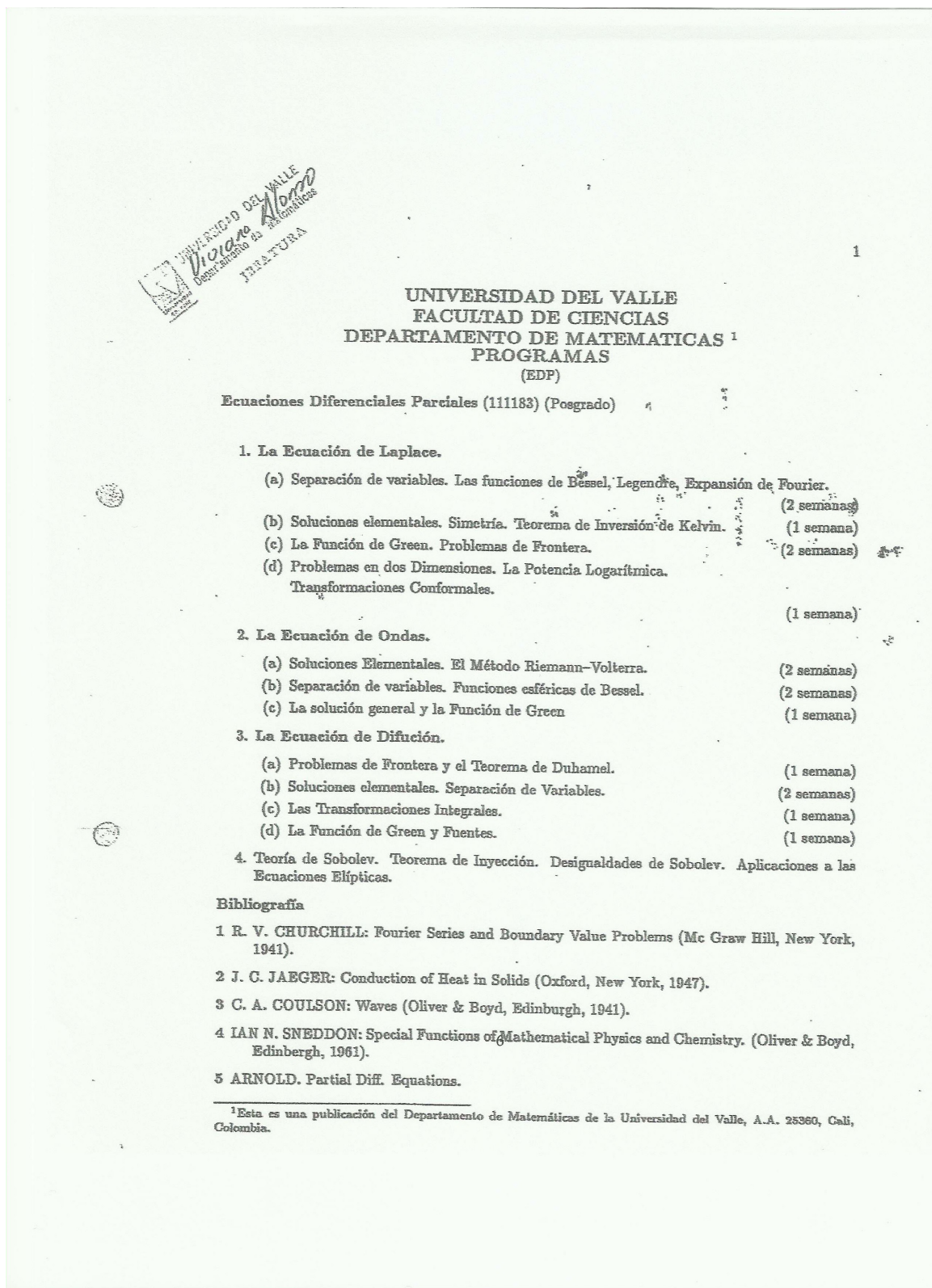


Figure 1: EDP program