

# Rodrigo G. Schaefer

PH.D IN APPLIED MATHEMATICS

Av Diagonal. 647 ETSEIB, 08028, Barcelona, Spain

☎ (+34) 673 84 58 11 | ✉ rodrigo.schaefer@upc.edu | 🌐 schaeferrodrigo.github.io/ | 📱 schaeferrodrigo

## Research interests

---

### Arnold Diffusion

#### CURRENT RESEARCH

- Arnold diffusion in an *a priori unstable* Hamiltonian system.

### Celestial Mechanics

- N-body problem on surfaces

## Education

---

### Ph.D in Applied Mathematics

Barcelona, Spain

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Sep. 2014 - Jul. 2018

- Title: Global Instability in Hamiltonian Systems
- Advisor: Amadeu Delshams
- Qualification: Excellent *cum laude*
- Got a CNPq Scholarship (Brazil).

### M.S. in Mathematics

Rio de Janeiro, Brazil

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

Mar. 2012 - May 2014

- Master's thesis: A dinâmica de N corpos sobre superfícies : um exemplo para 2 corpos
- Advisor: Stefanella Boatto
- Got a FAPERJ - Scholarship which is given to the two best students in Master program - Dept. of Math

### B.S. in Mathematics

Rio de Janeiro, Brazil

UFRJ (UNIVERSIDADE FEDERAL DO RIO DE JANEIRO)

Mar. 2008 - Jan 2012

## Publications

---

### Arnold diffusion for a complete family of perturbations

2017

DELSHAMS, A. AND SCHAEFER, R.G.

- Regular and Chaotic Dynamics

### N-body dynamics on closed surfaces: the axioms of mechanics

2016

BOATTO, S., DRITSCHER, D.G. AND SCHAEFER, R.G.

- Proceedings of the Royal Society of London A: Mathematical, Physical and Engineering Science

#### PREPRINT

### Arnold diffusion for a complete family of perturbations with two independent harmonics

2017

DELSHAMS, A. AND SCHAEFER, R.G.

- To appear in Discrete and Continuous Dynamical Systems

## Work experience

---

### Temporary lecturer

Rio de Janeiro, Brazil

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

Mar. 2014 - Aug. 2014

- Differential and Integral Calculus
- Linear Algebra

## Teaching assistant

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

- Linear Algebra

*Rio de Janeiro, Brazil*

2009 - 2011

## Presentation

---

### INVITED TALKS

#### Geometry, Dynamics, Integrable Systems

SCATTERING MAPS AND GLOBAL INSTABILITY IN HAMILTONIAN SYSTEMS

*Moscow, Russia*

2018

#### IV Congreso de Jóvenes Investigadores-Real Sociedad Matemática Española

GLOBAL INSTABILITY IN HAMILTONIAN SYSTEMS

*Valencia, Spain*

2017

#### JuniorGesta

GLOBAL INSTABILITY IN HAMILTONIAN SYSTEMS

*Barcelona, Spain*

2016

### OTHER PRESENTATIONS

#### Satellite Dynamics and Space Missions: Theory and Applications of Celestial Mechanics

ARNOLD DIFFUSION FOR SEVERAL EXAMPLES USING SCATTERING MAPS (POSTER)

*San Martino al Cimino, Italy*

2017

#### Llavefest: A Broad Perspective on Finite and Infinite Dimensional Dynamics Systems

ARNOLD DIFFUSION FOR SEVERAL EXAMPLES USING SCATTERING MAPS (POSTER)

*Barcelona, Spain*

2017

#### 14th Winter School of the Spanish Dance Network

ARNOLD DIFFUSION FOR SEVERAL EXAMPLES USING SCATTERING MAP (POSTER)

*Vigo, Spain*

2017

#### Barcelona UB-UPC DSG Seminar

GLOBAL INSTABILITY IN HAMILTONIAN SYSTEMS AND SEVERAL SCATTERING MAPS

*Barcelona, Spain*

2016

#### 13th Winter School of the Spanish Dance Network

ARNOLD DIFFUSION USING SEVERAL COMBINATIONS OF SCATTERING MAPS (POSTER)

*Seville, Spain*

2016

#### 14th Workshop on interactions between Dynamical Systems and PDE's.

ARNOLD DIFFUSION USING SEVERAL COMBINATIONS OF SCATTERING MAPS (POSTER)

*Barcelona, Spain*

2016

#### II BGSMath Junior Meeting

GLOBAL INSTABILITY IN HAMILTONIAN SYSTEMS

*Barcelona, Spain*

2016

#### CNMAC - Congresso Nacional de Matemática Aplicada e Computacional

PROPAGAÇÃO DE UM IMPULSO ELÉTRICO EM UM AXÔNIO NERVOSO (POSTER)

*Águas de Lindóia, Brazil*

2012

## Research Group and Networks

---

### Laboratory of Geometry and Dynamical Systems

MEMBER

Barcelona

2017 - Present

- Group of researchers in Dynamical Systems and Symplectic geometry of Universitat Politècnica de Catalunya

### UPC Dynamical System Group

MEMBER

Barcelona

2014 - Present

- Group of researchers in Dynamical Systems of Universitat Politècnica de Catalunya

### DANCE

MEMBER

Spain

2016-Present

- Network of spanish reseachers in Dynamical Systems

## Participation in funded projects

---

### Sistemes dinàmics de la UPC - 2017SGR1049

MEMBER

Barcelona

2017 - Present

- Funded by Catalan Science Department / Leading researcher: Tere Martinez-Seara

### Dinámica Asociada a Conexiones entre Objetos Invariantes con Aplicaciones a Neurociencia y Astrodinámica

MEMBER

Barcelona

2016 - 2018

- Funded by Ministerio de Economía y Competitividad (Spain) / Leading researcher: Tere Martinez-Seara

### Sistemes dinàmics de la UPC - 2014SGR504

MEMBER

Barcelona

2015-2016

- Funded by Catalan Science Department / Leading researcher: Tere Martinez-Seara

### Dinámica Asociada a Conexiones entre Objetos Invariantes, Aplicaciones a Astrodinámica, Neurociencia y Otros Campos

MEMBER

Barcelona

2014 - 2015

- Funded by Ministerio de Economía y Competitividad (Spain) / Leading researcher: Amadeu Delshams

## Other Courses

---

### Introduction to Python

CENTRE DE RECERCA MATAMÀTICA

Barcelona

2015

### R Programming

JOHNS HOPKINS UNIVERSITY

Coursera

2016

### Getting and Cleaning Data

JOHNS HOPKINS UNIVERSITY

Coursera

2016

## Languages

---

Portuguese

Native Fluent

English

Intermediate

Spanish

Advanced

Catalan

Intermediate

## Programming Languages

---

## References

---

### Amadeu Delshams

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*amadeu.delshams@upc.edu*

### Stefanella Boatto

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

*boattostefanella@gmail.com*

### Marcel Guardia

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*marcel.guardia@upc.edu*

### Eva Miranda

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*eva.miranda@upc.edu*

## Congresses and conferences attended

---

### 16th Workshop on interactions between Dynamical Systems and PDE's

CENTRE DE RECERCA MATEMÀTICA

*Bellaterra, Spain*

2018

### Perspectives in Hamiltonian Systems

UNIVERSITÀ DEGLI STUDI DI PADOVA

*Venice, Italy*

2018

### Geometry, Dynamics, Integrable systems

MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY

*Moscow, Russia*

2018

### 15th Winter School : Recents Trends in Nonlinear Sciences

DANCE-NET

*Logroño, Spain*

2018

### CSF Hamiltonian Systems

ETH INSTITUTE FOR THEORETICAL STUDIES

*Ascona, Switzerland*

2017

### IV Congreso de Jóvenes Investigadores-Real Sociedad Matemática Española

REAL SOCIEDAD MATEMÁTICA ESPAÑOLA

*Valencia, Spain*

2017

### Satellite Dynamics and Space Missions: Theory and Applications of Celestial Mechanics

SOCIETÀ ITALIANA DI MECCANICA CELESTE E ASTRODINAMICA

*San Martin al Cimino, Italy*

2017

### Finite Dimensional Integrable Systems in Geometry and Mathematical Physics

CENTRE DE RECERCA MATEMÀTICA

*Bellaterra, Spain*

2017

### 15th Workshop on interactions between Dynamical Systems and PDE's

CENTRE DE RECERCA MATEMÀTICA

*Bellaterra, Spain*

2017

**Llavefest: A Broad Perspective on Finite and Infinite Dimensional Dynamical Systems**

CENTRE DE RECERCA MATEMÀTICA

*Barcelona, Spain*

2017

**Winter School in Conservative Dynamics**

ETH INSTITUTE FOR THEORETICAL STUDIES

*Engelberg, Switzerland*

2017

**13th Winter School : Recents Trends in Nonlinear Sciences**

DANCE-NET

*Vigo, Spain*

2017

**DDays**

DANCE-NET

*Salou, Spain*

2016

**14th Workshop on interactions between Dynamical Systems and PDE's**

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*Barcelona, Spain*

2016

**II BGSMATH Junior Meeting**

BGSMATH

*Barcelona, Spain*

2016

**GestaJunior**

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*Barcelona, Spain*

2016

**13th Winter School : Recents Trends in Nonlinear Sciences**

DANCE-NET

*Seville, Spain*

2016

**Global Dynamics in Hamiltonian Systems**

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*Vall de Núria, Spain*

2015

**13th Workshop on interactions between Dynamical Systems and PDE's**

UNIVERSITAT POLITÈCNICA DE CATALUNYA

*Barcelona, Spain*

2015

**12th Winter School : Recents Trends in Nonlinear Sciences**

UNIVERSIDAD DE VALLADOLID AND DANCE-NET

*Valladolid, Spain*

2015

**Shilnikov Workshop.**

LOBACHEVSKY STATE UNIVERSITY OF NIZHNI NOVGOROD

*Nizhny Novgorod, Russia*

2014

**Hamiltonian Dynamics, Non-Autonomous System and Patterns in PDE's.**

LOBACHEVSKY STATE UNIVERSITY OF NIZHNI NOVGOROD

*Nizhny Novgorod, Russia*

2014

**7th DDAYS**

DANCE-NET

*Badajoz, Spain*

2014

## Barcelona Mathematical Days

SOCIETAT CATALANA DE MATEMÀTIQUES

*Barcelona, Spain*

2014

## CNMAC- Congresso Nacional de Matemática Aplicada e Computacional

SBMAC

*Águas de Lindóia, Brasil*

2012