

# Curriculum Vitae

## PERSONAL DATA

**Last name** : Buică  
**First name** : Florina-Adriana  
**Nationality** : Romanian  
**Citizenship** : Romanian

## STUDIES AND DEGREES

- PhD in Mathematics, Babeş-Bolyai University, 2000  
Subject: Coincidence Principles and Applications  
PhD Supervisor : Prof. Dr. Ioan A. Rus  
Public defense: December, 15, 2000
- Babeş-Bolyai University, Faculty of Mathematics, Cluj-Napoca, 1990-1995
- Secondary School Drăgăşani, 1986-1990

## ACADEMIC POSITIONS

- Teaching Assistant, Faculty of Mathematics, Babeş-Bolyai University  
(October 1995 - January 2002)
- Lecturer, Faculty of Mathematics, Babeş-Bolyai University (January 2002 -  
January 2007)
- Associate Professor, Faculty of Mathematics, Babeş-Bolyai University  
(February 2007 - ...)

### **VISITING POSITIONS (longer than 1 month)**

- Institut Henri Poincaré, Paris, France (October 2003)  
ERCOM (European Research Centres on Mathematics) exchange
- Centre de Recerca Matemàtica, Barcelona, Spain (March 2003 - August 2004)  
Ministerio de Education, Cultura y Deporte grant number SB2001-0117
- Department of Mathematics, University of Würzburg, Germany (June–July 2005)  
DAAD (Deutscher Akademischer Austausch Dienst) grant
- Department of Mathematics, Universitat Autònoma de Barcelona, Spain  
(October 2005 - July 2006)  
AUF (Agence Universitaire de la Francophonie) grant
- Department of Mathematics, Universitat de Lleida, Spain  
(September 2007 - January 2008 and September 2008 - December 2008)

### **TEACHING ACTIVITY**

I have been teaching the following subjects (theory and problems) since 1995:

- calculus (in Spanish at the University of Lleida, Spain and in Romanian at Babeş–Bolyai University, Romania)
- ordinary differential equations (both in English and in Romanian at Babeş–Bolyai University, Romania)
- partial differential equations
- fixed point theory
- biomathematics

### **RESEARCH DOMAINS**

- ordinary differential equations, partial differential equations
- nonlinear analysis, nonlinear operator equations
- fixed point theory, topological degree, accretive operators
- semigroups of operators, dynamical systems
- limit cycles for differential systems
- Abelian integrals, Melnikov functions

### **Doctoral Committee**

- PhD in Mathematics of Susanna Maza, Universitat de Lleida, December 2008,  
with the thesis "Discrete and Continuous Symmetries in Planar Vector Fields"

## INSTRUCTIONAL MEETINGS

- Summer School on Nonlinear Analysis and Applications, Braşov, Romania, July 1996.
  
- Summer School on Nonlinear Analysis organized by Scuola Matematica Interuniversitaria, Cortona, Italy, July 1997.
  
- Summer School on Elliptic Equations organized by Scuola Matematica Interuniversitaria, Cortona, Italy, July 1998.
  
- Spring School on Function Spaces, Paseky, Czech Republic, June 1999.
  
- Trends in Nonlinear Analysis - Theory, Modelling and Computation, Heidelberg, Germany, October 2000.
  
- Instructional Conference: Nonlinear Partial Differential Equations, Edinburgh, Great Britain, January 2001.
  
- Introductory Workshop in Integral Geometry and Inverse Problems, Mathematical Sciences Research Institute, Berkeley, California, August 2001.
  
- Biomathematics Euro Summer School on Dynamical Systems in Physiology and Medicine, Urbino, Italy, July 2002.
  
- Recent Trends in Nonlinear Science, Gijón, Spain, February 2006.
  
- Advanced Course on Limit Cycles of Differential Equations, Centre de Recerca Matemàtica, Barcelona, Spain, July 2006.
  
- Recent Trends in Nonlinear Science, Granada, Spain, February 2007.
  
- Workshop sobre Órbitas Periódicas de Ecuaciones Diferenciales, Tossa de Mar, Spain, October, 2008.
  
- Recent Trends in Nonlinear Science, Carmona, Seville, Spain, January 2009.

## TALKS IN SEMINARS AND CONFERENCES

- Students Conference, Gödölö, Hungary, April 1995; Communication: *Existence and continuous dependence of solutions of some functional-differential equations*, awarded with the second prize.
  
- The Itinerant Seminar Tiberiu Popoviciu, Cluj-Napoca, Romania, May 1997; Communication: *Data dependence theorems on coincidence problems*.
  
- The Second Joint Romanian-Hungarian Conference on Modern Applied Mathematics, Ilieni, Romania, June 1997; Communication: *F-coincidence structures*.
  
- 4ème Colloque Franco-Roumain de Mathématiques Appliquées, Metz, France, September 1998; Poster: *Old and new Gronwall-type inequalities as consequences of an abstract lemma of Rus*.
  
- Workshop on Differential Equations and Control, Iași, Romania, May 1999; Communication: *Elliptic and parabolic inequalities*.
  
- The Third Joint Romanian-Hungarian Conference on Modern Applied Mathematics, Visegrad, Hungary, June 1999; Communication: *Contributions to coincidence degree theory of some homogeneous operators*.
  
- Seminar on Fixed Point Theory and Applications (International Conference), Cluj-Napoca, Romania, October 1999; Communication: *Some properties preserved by nearness and weak-nearness between operators. Applications to PDE*.
  
- Tiberiu Popoviciu Itinerant Seminar of Functional Equations, Approximation and Convexity, Cluj-Napoca, Romania, May 2000; Communication: *On Peetre's condition in coincidence theory. I. Abstract results*
  
- The third European Congress of Mathematics, Barcelona, Spain, July 2000; Poster: *Existence, uniqueness and comparison results for evolution problems with discontinuous nonlinearities*.
  
- Seminar talk at University of Würzburg, Germany, October 2000; Subject: *Weak nearness between operators and fully nonlinear elliptic equations*.

- Séminaire de la théorie de la meilleure approximation, convexité et optimisation, Cluj-Napoca, Romania, October 2000; Communication: *On Peetre's condition in coincidence theory. II. Relations with other coincidence theorems and applications.*
- International Conference on Nonlinear Operators, Differential Equations and Applications, Babeş-Bolyai University, Cluj-Napoca, Romania, September 2001; Invited Lecture: *The method of lower and upper solutions and the monotone iterative technique for differential equations.*
- 135-th Pannonian Applied Mathematical Meeting, Baia Mare - Borşa, Romania, October 2001; Communication: *On the coincidence degree of homogeneous operators.*
- Tiberiu Popoviciu Itinerant Seminar of Functional Equations, Approximation and Convexity, Cluj-Napoca, Romania, May 2002; Communication: *Monotone Newton-type iterations for nonlinear equations.*
- Theodor Angheluță Conference, Cluj Napoca - Băișoara, Romania, June 2002; Communication: *Quasilinearization for the forced Duffing equation.*
- Third International Conference on Applied Mathematics, Baia Mare - Borşa, Romania, October 2002; Communication: *Gronwall-type inequalities for some problems in coincidence form.*
- Recent Trends in Dynamics, Porto, Portugal, July 2003; Lecture: *Averaging methods for finding periodic orbits via Brouwer degree.*
- Seminar talks at Universitat Autònoma de Barcelona, Spain: November 2003; Subject: *Coincidence theorems and some of their applications.* May 2004; Subject: *Bifurcation of limit cycles from a 4-dimensional center in control systems.*
- Nolineal, Toledo, Spain, June 2004; Communication: *Bifurcation of limit cycles from a 4-dimensional center inside control systems.*
- International Conference on Nonlinear Operators, Differential Equations and Applications, Babeş-Bolyai University, Cluj-Napoca, Romania, August 2004; Lecture: *Averaging methods for finding periodic orbits of differential equations.*

- Seminar talk at Universitat Autònoma de Barcelona, Spain, May 2005; Subject: *Limit cycles bifurcation from a cubic center perturbed inside  $n$ th degree polynomial systems.*
  
- Seminar talk at University of Stuttgart, Germany, July 2005; Subject: *The quasilinearization method for nonlinear elliptic equations.*
  
- Seminar talks at Universitat Autònoma de Barcelona, Spain:  
 May 2006; Subject: *Periodic solutions of nonlinear periodic differential systems with a small parameter.*  
 June 2006; Subject: *The third order Melnikov function of a quadratic center under quadratic perturbations.*  
 February 2007; Subject: *Periodic solutions for Lipschitz systems with a small parameter*
  
- International Conference on Topological Methods, Differential Equations and Dynamical Systems, Firenze, Italy, June 2007; Lecture: *Stability of periodic solutions obtained via the averaging method for Lipschitz systems*
  
- International Conference on Nonlinear Operators, Differential Equations and Applications, Babeş-Bolyai University, Cluj-Napoca, Romania, July 2007; Lecture: *Contributions to coincidence degree theory of asymptotically homogeneous operators*
  
- Seminar talk at Universitat de Lleida, Spain, October 2007: *Sobre el principio del argumento, el grado topológico y el índice de Poincaré-Bendixson*
  
- Seminar talk at Universidad de Granada, Spain, November 2007: *Bifurcation of periodic solutions in  $n$ -dimensional systems from an isochronous continuum*
  
- Seminar talk at Universitat Autònoma de Barcelona, Spain, November 2007: *Lyapunov-Schmidt reduction for nonsmooth functions with applications to the bifurcation of periodic solutions in  $n$ -dimensional systems*
  
- International Conference Semicentennial "Tiberiu Popoviciu" Institute of Numerical Analysis, Cluj-Napoca, Romania, May 2008; Lecture: *An abstract result on the quasilinearization method and its applications*

- Mathematical Models in Engineering, Biology and Medicine. Conference on Boundary Value Problems, Santiago de Compostela, Spain, September 2008; Lecture: *Limit cycles of a quadratic polynomial planar system: the third order Melnikov function*
- Seminar talk at UNED Madrid, Spain, November 2008: *El método del promedio y ciclos límite de sistemas planos*
- Singularités des champs de vecteurs du plan. Bifurcations et applications, Centre International de Rencontres Mathématiques, Marseille, France, mai 2009; Communication: *Periodic solutions of the perturbed symmetric Euler top*
- Workshop on Resonance Oscillations and Stability of Nonsmooth systems, Imperial College London, United Kingdom, June 2009; Lecture: *Periodic solutions of the perturbed symmetric Euler top*

November 25, 2009

Adriana Buică