

Márcia Federson

Associate Professor
Instituto de Ciências Matemáticas e de Computação
Universidade de São Paulo

Curriculum Vitae

Personal Data:

Birthdate: July 30, 1967.

Birthplace: São Paulo, Brazil

Citizenship: Brazilian

Affiliation and Address: Instituto de Ciências Matemáticas e de Computação
Universidade de São Paulo
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Research Interest:

Non-absolute Integration

Integral Equations

Retarded Functional Differential Equations

Impulsive Differential Equations

Education and Employment:

- 2006-today: Associate Professor, Differential Equations, Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo
- 2005: Postdoctoral Fellow, Integration and Differential Equations, Mathematical Institute, Academy of Sciences of the Czech Republic
- 2002-2006: Assistant Professor, Differential Equations, Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo
- 1999-2001: Postdoctoral Fellow, Differential Equations, FAPESP, Instituto de Ciências Matemáticas e de Computação, Universidade de So Paulo
- 1998: PhD, Integral Equations, Instituto de Matemática e Estatística, Universidade de São Paulo

- 1993: MSc, Integration, Instituto de Matemática e Estatística, Universidade de São Paulo
- 1989: BSc, BA, Mathematics, Faculdade de Ciências Exatas e Experimentais, Universidade Mackenzie

Editorial Board:

- Member of the Editorial Board of the journal "*Integration: Mathematical Theory and Applications*"; Editor for Integral Equations.

Reviewer and Referee:

- Reviewer for Zentralblatt MATH
- Reviewer for Unita' Editoriale Italiana Zentralblatt MATH
- Referee for the following journals:
 - *Journal of Mathematical Analysis and Applications.*
 - *Integration: Mathematical Theory and Applications.*
 - *International Journal of Mathematics and Mathematical Sciences.*
 - *Computational and Applied Mathematics.*
 - *Journal of Inequalities and Applications.*
 - *Computers and Mathematics with Applications.*
 - *The Rocky Mountain Journal of Mathematics.*
 - *Dynamic Systems and Applications.*
 - *Mathematische Nachrichten.*
- Referee for the Grant Agency of the Academy of Science of the Czech Republic.

Academic:

- Dec/2006 - Dec/ 2009: **Coordinator of the Graduate Program in Mathematics** at the Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo.
- Apr/2006 - Dec/2006 **Vice-Coordinator of the Graduate Program in Mathematics** at the Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo.
- Mai/2003 - Nov/2004: **Vice-Coordinator of the BSc course in Applied Mathematics** at the Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo.
- Jan-Feb/2003: **Coordinator of the Summer School** of the Graduate Program in Mathematics at the Instituto de Ciências Matemáticas e de Computação, Universidade de São Paulo.

Teaching:

My teaching experience spans almost six years at the Universidade de São Paulo at São Carlos. I have taught linear algebra, first and second year calculus, discrete mathematics and functional analysis. These courses have ranged from elementary level for general students to advanced level for mathematics majors. Class sizes run from 15 to 75. My teaching duties have included lecturing; running tutorials; making up and grading exams, tests, quizzes and assignments. I have taught students of mathematics, chemistry, physics, computer science and engineering.

I have also taught complex analysis, generalized ODEs, impulsive differential equations and functional differential equations at graduate level.

Past students supervision:

RESEARCH EXPERIENCE FOR UNDERGRADUATES

1. Student: Fernando Henrique Fornari Genaro
Project: "*Integral Equations - An Introduction and Applications*", 2002-2003. Supported by FAPESP.
2. Student: Aieda Batistela de Sirqueira
Project: "*Introduction to Impulsive Differential Equations*", 2002-2003. Supported by FAPESP.
3. Student: Aline Mide Romano
Project: "*An Introduction to the Study of Stability in ODEs*", 2002-2003. Supported by FAPESP.
4. Student: Welton Antonio Gomes
Project: "*Mathematical Models Involving ODEs*", 2002-2003. Supported by FAPESP.
5. Student: Eduardo Favarão Botelho
Project: "*A Modern Approach to Integration*", 2003-2004. Supported by CNPq.
6. Student: Eduardo Favarão Botelho
Project: "*Metric Spaces*", 2004-2005. Supported by CNPq.
7. Student: Rodrigo Lopes Costa
Project: "*An Introduction to Financial Calculus*", 2005-2006. Supported by CNPq.

MASTER DEGREE

1. Student: Everaldo de Mello Bonotto
Project: "*Semidynamical Systems in Impulsive Differential Equations*", 2003-2005. Supported by CNPq.
2. Student: Angela Leite Moreno
Project: "*Dichotomies in Impulsive Differential Equations*", 2003-2005. Supported by CNPq.

DOCTOR DEGREE

1. Student: Luciene Parron Gimenes
Project: "*stability and Oscillations of Solutions of Retarded Differential Equations with Impulses*", 2003-2007. Supported by CAPES.

Current students supervision:

RESEARCH EXPERIENCE FOR UNDERGRADUATES

1. Student: Rodolfo Collegari
Project: "*A Modern Approach to Integration*", 2007-2008. Supported by FAPESP.

MASTER DEGREE

1. Student: Lucas Felipe Rodrigues dos Santos Garcia
Project: "*Qualitative Properties of Measure Differential Equations*", 2006-2008. Supported by CAPES.
2. Student: Jaqueline Bezerra Godoy
Project: "*Averaging Method for Impulsive Differential Equations and Applications*", 2007-2009. Supported by FAPESP.

DOCTOR DEGREE

1. Student: Everaldo de Mello Bonotto
Project: "*The Black-Scholes PDE with Impulse Action*", 2005-2009. Supported by CNPq.

List of publications:

1. **M. Federson**; R. Bianconi, *Existence of solutions for linear Fredholm-Stieltjes integral equations via Henstock-Kurzweil integral*, Integration: Math. Theory Appl., accepted.
2. E. M. Bonotto; **M. Federson**, *Limit sets and the Poincar-Bendixon Theorem in semidynamical impulsive systems*, Journal of Differential Equations, accepted.
3. **M. Federson**; Š. Schwabik, *Stability for retarded functional differential equations*, Nonlinear Oscillations, in press.
4. E. M. Bonotto; **M. Federson**, *Topological conjugation and asymptotic stability in impulsive semi-dynamical systems*, J. Math Anal. Appl., 326, (2007), 869-881.
5. L. P. Gimenes, **M. Federson**; P. Z. Tboas, *Impulsive stability of systems of second order retarded differential equations*, Nonlinear Analysis - Theory, Methods and Applications, 67 (2007), 545-553.
6. L. P. Gimenes, **M. Federson**, *Oscillation by impulses for a second order delay differential equation*, Comp. Math. Appl. 52(6-7), (2006), 819-828.
7. **M. Federson**; Š. Schwabik, *Generalized ODEs approach to impulsive retarded functional differential equations*, Differential and Integral Equations 19(11), (2006), 1201-1234.
8. L. P. Gimenes; **M. Federson**, *Existence and impulsive stability for second order retarded differential equations*, Appl. Math. and Comp., 177(1), (2006), 44-62.
9. **M. Federson**; R. Bianconi; L. Barbanti, *Linear Volterra integral equations as the limit of discrete systems*, Acta Math. Appl. Sin. Engl. Ser., 20(4), (2004), 623-640.
10. **M. Federson**, *Some peculiarities of the Henstock and Kurzweil integrals of Banach space-valued functions*, Real Anal. Exchange, 29(1), (2003-2004), 439-460.
11. **M. Federson**; P. Z. Tboas, *Topological dynamics of retarded functional differential equations*, J. Differential Equations, 195(2), (2003), 313-331.
12. **M. Federson**; P. Z. Tboas, *Impulsive retarded differential equations in Banach spaces via Bochner-Lebesgue and Henstock integrals*, Nonlinear Anal., Ser. A: Theory Methods, 50(3), (2002), 389-407.
13. **M. Federson**; R. Bianconi, *Linear Fredholm integral equations and the integral of Kurzweil*, J. of Applied Analysis, 8(1), (2002), 83-110.
14. **M. Federson**; R. Bianconi; L. Barbanti, *Linear Volterra integral equations*, Acta Math. Appl. Sin. Engl. Ser., 18(4), (2002), 553-560.
15. **M. Federson**, *The Monotone Convergence Theorem for multi-dimensional abstract Kurzweil vector integrals*, Czechoslovak Math. J., 52(127), 2, (2002), 429-437.
16. **M. Federson**, *A constructive integral equivalent to the integral of Kurzweil*, Czechoslovak Math. J., 52(127), 2, (2002), 365-367.
17. **M. Federson**, *Substitution Formulas for the Kurzweil and Henstock vector integrals*, Math. Bohem., 127(1), (2002), 15-26.
18. **M. Federson**; R. Bianconi, *Linear Volterra-Stieltjes integral equations in the sense of the Kurzweil-Henstock integral*, Arch. Math. (Brno), 37(4), (2001), 307-328.
19. **M. Federson**, *The Fundamental Theorem of Calculus for multidimensional Banach space-valued Henstock vector integrals*, Real Anal. Exchange, 25(1), (1999-2000), 469-480.
20. **M. Federson**; R. Bianconi, *Linear integral equations of Volterra concerning Henstock integrals*, Real Anal. Exchange, 25(1), (1999-2000), 389-417.