

CURRICULUM VITAE

Name: Viorica Mariela Ungureanu

Date of Birth: the 4th February 1968

Place of Birth: Tirgu-Jiu, Romania

Nationality: Romanian

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Education:

B. Sc. in Mathematics, University of Bucharest 1990

M.Sc. in Mathematics (Stochastic Processes), University of Bucharest 1991

B. Sc. in Computer Science, University of Craiova 2000

Ph.D. in Mathematics, University of Timisoara 2002

**(Asymptotic behavior of stochastic linear equations in
Hilbert spaces, advisor prof. dr. Mihail Megan)**

Employment Record:

**Tutor - University Constantin Brancusi of Targu-Jiu (Department of
Applied Mechanics) 1991-1994**

**Asst. Lecturer - University Constantin Brancusi of
Targu-Jiu (Department of Applied Mechanics) 1994-1997**

**Lecturer - University Constantin Brancusi of Targu-Jiu (Department of
Applied Mechanics) 1997-2005**

**Associate Professor University Constantin Brancusi of Targu-Jiu (Department of
Mathematics) 2005-present.**

Research Interests: stochastic control and stochastic stability

**Recently, I am investigating quadratic control problems (with indefinite or
nonnegative control weight cost) for linear differential stochastic equations under**

stabilizability and uniform observability conditions. These problems require the study of the existence of the (global) solutions of the associated Riccati equations (which in most of the cases are not the standard Riccati equations) and respectively the asymptotic behavior of these solutions.

Conferences /Summer schools to which I obtained grants:

1. Analysis and Optimization of Differential Systems Conference, Constanța, septembrie 2002 - paper: *Riccati equation of stochastic control and stochastic uniform observability in infinite dimensions.*
2. AMAM 2003 (First EMS-SMAI-SMF Joint Conference - Applied Mathematics and Applications of Mathematics), Nisa, 10-13 februarie 2003- paper prezentată: *Uniform exponential stability and uniform observability for time-varying linear stochastic systems in Hilbert spaces* (Poster).
3. Fourth European Congress of Mathematics, Stockholm, 27 iunie-2 iulie 2004.

Other conferences to which I have participated:

1. Conferința Națională de Analiză Matematică și Aplicații (National Conference on Analysis and Applications), Timisoara, November 1998 - paper *Exponential dichotomy of stochastic differential equations*
2. Conferința Națională de Analiză Matematică și Aplicații (National Conference on Analysis and Applications), Timisoara, December 2000 - paper *On uniform observability for time varying linear stochastic systems in Hilbert spaces.*
3. Conferința Națională de Analiză Matematică și Aplicații (National Conference on Analysis and Applications), Craiova, November 2001 - paper *Uniform exponential stability for linear discrete time systems with stochastic perturbations.*
4. OT19 (19th International Conference on Operator Theory), Timisoara, June, 2002 - paper *Uniform exponential stability and uniform observability for time-varying linear stochastic systems.*
5. Conference "Analysis and Optimization of Differential Systems", Constanta, September 2002 - paper *Riccati equation of stochastic control and stochastic uniform observability in infinite dimensions.*
6. ICAM3 (3th International Conference on Applied Mathematics), Baia-Mare - Borsa, October, 2002 - paper *On uniform observability of linear discrete-time systems.*
7. Conferința Națională de Analiză Matematică și Aplicații, Cluj Napoca, November 2002 - paper *The quadratic control for linear discrete time systems with independent random perturbations in Hilbert spaces connected with uniform observability.*
8. AMAM 2003 (First EMS-SMAI-SMF Joint Conference - Applied Mathematics and Applications of Mathematics), Nice, February 2003- paper: *Uniform exponential stability and uniform observability for time-varying linear stochastic systems in Hilbert spaces* (Poster session).
9. CAIM 2003 (Conference on Applied and Industrial Mathematics), Oradea, May, 2003

- cu paper *Uniform observability of autonomous linear stochastic equations with unbounded coefficients in Hilbert spaces.*

10. ICTAMI 2003(International Conference on Theory and Applications of Mathematics and Informatics), Alba Iulia, October 24 -26, 2003 - paper *Exponential stability of stochastic linear discrete -time systems with periodic coefficients in Hilbert spaces.*

12. OT20 (20th International Conference on Operator Theory), Timisoara, June, 2004 - paper *Tracking problem for linear discrete-time systems with independent random perturbations in Hilbert spaces.*

13. ICNODEA(International Conference on Nonlinear Operators, Differential Equations and Applications) Cluj, August, 2004 - paper *Cost of tracking for differential stochastic equations in Hilbert Spaces.*

14. Conferința științifică anuală a Societății de Științe Matematice din România, Lugoj, May 2005 - paper *Quadratic control under partial observations for nonautonomous discrete-time systems.*

15. Operator Algebras and Mathematical Physics Conference, București (România), July 2005- paper: *Quadratic control for partially observed systems in Hilbert spaces.*

16. Conferința Națională de Analiză Matematică și Aplicații, Craiova (Romania), September 2005- paper *Almost sure tracking for linear periodic discrete time systems.*

17. 13 th Conference on Applied and Industrial mathematics 2005, Pitesti, Romania, October - paper: *Optimal control and stochastic uniform observability.*

18. Conference *Several aspects of biology, chemistry, informatics, mathematics and physics*, Oradea, Romania, November 2005 - paper: *Tracking problem for linear periodic, discrete-time stochastic systems in Hilbert spaces .*

Grants

1. *Proprietati calitative ale proceselor evolutive cu control în spații Banach*
Codes CNCSIS 246/2002, 249/2003, 2004.

Project manager : Prof. Dr. M. Megan(West University of Timisoara)

2. *Comportări asimptotice pentru sisteme cu control în spații infinit dimensionale*, Codes CNCSIS: 21/1999, 849/2000, 305/2001.

Project manager : Prof. Dr. M. Megan(West University of Timisoara)

3. *The promotion of scientific research concerning: operator models and applications*, grant CEEEX (module: The promotion of participation to research European and international programs; type: Increasing institutional and research programs visibility) from the Romanian Ministry of Education and Research, code PR-D11-PT00-48/2005.

Project manager: Assoc. Professor Dan Popovici (West University of Timisoara);

Scientist in charge: for the team of University Constantin Brancusi: Assoc. Professor Vasile Lupulescu
Publications

Papers

1. V. M. Ungureanu, Exponential dichotomy of stochastic differential equations, *Analele Universitatii din Timisoara, Seria Matematica-Informatica*, vol. xxvii, fasc.1, pp. 149-

158, 1999.

2. V. M. Ungureanu, A counter-example for the implication "uniform controllability implies stabilizability" in the stochastic case, Seminar on mathematical analysis and applications in control theory, nr 118, Timisoara, 2000.

3. V. M. Ungureanu, Uniform exponential stability for linear discrete time systems with stochastic perturbations, Analele Universitatii din Craiova, Seria Matematica - Informatica, vol xxviii, 2001.

4. V. M. Ungureanu, On uniform observability of linear discrete-time systems, Proceedings of the 3rd International Conference on Applied Mathematics (Borsa, 2002), Bul. Stiint. Univ. Baia Mare, Ser. B Fasc. Mat.-Inform. 18 (2002), no. 2, 367--372.

5. V. M. Ungureanu, On uniform observability for time-varying linear stochastic systems in Hilbert spaces, Proceedings of the National Conference on Mathematical Analysis and Applications, (Romania) pp. 457- 470.

6. V. M. Ungureanu, On uniform exponential stability of uniform observable time-varying linear stochastic differential equations, Seminar on Mathematical Analysis and Applications in control Theory, Timisoara, no. 137(2002), 1-15.

7. V. M. Ungureanu, Riccati equation of stochastic control and stochastic and stochastic uniform observability in infinite dimensions, "Analysis and Optimization of Differential Systems", Edit. V. Barbu, I Lasiecka, D. Tiba, C. Varsan, Kluwer Academic Publishers, Boston/Dordrecht/London, 2003.

8. V. M. Ungureanu, Uniform observability of autonomous linear stochastic equations with unbounded coefficients in Hilbert spaces, Proceedings of the 11th Conference on Applied and Industrial Mathematics, pp. 224 - 230, Oradea, Romania, 2003.

9. V. M. Ungureanu, Representations of mild solutions of time-varying linear stochastic equations and the exponential stability of periodic systems, Electronic Journal of Qualitative Theory of Differential Equations, nr. 4, 2004, pp. 1-22.

10. V. M. Ungureanu, Uniform exponential stability for linear discrete time systems with stochastic perturbations in Hilbert spaces, Bolletino dell Unione Matematica Italiana (8) 7-B (2004), pp. 757 - 772.

11. V. M. Ungureanu, Exponential stability of stochastic linear discrete -time systems with periodic coefficients in Hilbert spaces, Proceedings of the International Conference on Theory and Applications of Mathematics and Informatics, Alba Iulia (Romania), 2003.

12. V. M. Ungureanu, Uniform exponential stability and uniform observability for time-varying linear stochastic systems, Operator Theory: Advances and Applications, Birkhauser Verlag Basel, vol. 153(2005), pp. 287-306. Proceedings to the " 19th

international Conference on Operator Theory", edit D. Gaspar etc.

13. V. M. Ungureanu, The quadratic control for linear discrete time systems with independent random perturbations in Hilbert spaces connected with uniform observability, Acta Math. Univ. Comenianae, vol. LXXIV, 1(2005), pp. 107-126

14. M. Ungureanu, Quadratic control problem for linear discrete -time varying systems with multiplicative noise in Hilbert spaces, Mathematical Reports nr 1 vol 7(57) 2005, pp. 73-89.

15. V. M. Ungureanu, Quadratic control of affine discrete-time, periodic systems with independent random perturbations, Portugalia Mathematicae, vol. 62 Fasc. 3. 2005(NS), pp. 303 -324.

16. V. M. Ungureanu, Cost of tracking for differential stochastic equations in Hilbert spaces, Studia Universitatis Babeş-Bolyai Mathematica, vol. L, 4(2005), pp. 73-83.

Accepted for publication (To appear)

V. M. Ungureanu, Almost sure tracking for linear discrete-time periodic systems with independent random perturbations and the uniform observability, Applied Mathematics E-Notes

V. M. Ungureanu, *Optimal control and stochastic uniform observability in Proceedings of the 13 th Conference on Applied and Industrial mathematics 2005, Pitesti, Romania*

Books

1. V. M. Ungureanu, Asymptotic behaviors of stochastic linear equations in Hilbert spaces"(in romanian), Mirton, Timisora 2003.

2. V. M. Ungureanu, Special Mathematics (in romanian), Mirton, Timisora 2003.

3. V. M. Ungureanu, M, R. Buneci, Linear Algebra (in romanian), Mirton, Timisora 2004.