# CURRICULUM VITAE

## Personal information


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| Surname: | STUPARIU |
| Christian names: | MIHAI-SORIN |
| Academic degree: | Ph.D. |
| Date of birth: | November 25, 1968 |
| Place of birth: | Sibiu, Romania |
| Citizenship: | Romanian |
| Civil status: | married, one child |
| Professional address: | University of Bucharest<br>Faculty of Mathematics and Computer Science<br>14, Academiei Str.<br>010014 - Bucharest, Romania |
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## University and graduate studies

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|---|---|
| 1988-1993 | Faculty of Mathematics, Bucharest University |
| 1993 | Master Degree (Diploma) in Mathematics, Bucharest University<br>Title of thesis: *The Evolution of the Views on the Solar System*<br>Advisor: Prof. Dr. K.Teleman |
| 1996-1998 | Ph.D.-student, with a position as assistant at the Institute of Mathematics of Zürich University |
| June 1998 | Ph. D., Zürich University<br>Title of the thesis: *The Kobayashi-Hitchin Correspondence for Vortex-Type Equations Coupled with Higgs Fields*<br>Advisors: Prof. Dr. Ch. Okonek, PD Dr. A. Teleman<br>Referees: Prof. Dr. Ch. Okonek, PD Dr. A. Teleman<br>PD Dr. M. Lübke (Leiden) |

## Academic positions

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|---|---|
| 1993-1996 | Subassistant, Faculty of Mathematics, University of Bucharest |
| 1996-1999 | Assistant, Institute of Mathematics, University of Zürich |
| 1999-March 2001 | Assistant, Faculty of Mathematics, University of Bucharest |
| April-June 2001 | EAGER postdoctoral fellowship, University of Zürich |
| July 2001-June 2002 | Postdoctoral assistant, University of Zürich |
| July 2002-June 2003 | Postdoctoral assistant, University of Leiden |
| Oct. 2003 - Sept. 2004 | Postdoctoral assistant, University of Zürich |
| Oct. 2004-Sept. 2005 | Assistant, Faculty of Mathematics, University of Bucharest |
| Since Oct. 2005 | Lecturer (Assistant professor), University of Bucharest |

# Scientific activity

## List of Publications and Preprints

[1] *Sur les courbes caractéristiques associées à l'algèbre de déformation des deux connexions linéaires* , Studii şi cercetări matematice, **5-6 (49)** (1997), 423 – 427.

[2] *Champs m-spéciaux dans l'algèbre de déformation* (joint work with Liviu Nicolescu and Iulia-Elena Hirică), An.Univ.Oradea, Fasc. Matem., **V** (1995-1996), 119 – 134.

[3] *On conformally semisymmetric connections* (joint work with Liviu Nicolescu and Iulia-Elena Hirică), An.Univ.Oradea, Fasc. Matem., **V** (1995-1996), pp. 135 – 149.

[4] *Dimensional reduction of monopole equations*, Math. Reports, **3 (53)** (2001), *3*, 293 – 303.

[5] *The Kobayashi-Hitchin correspondence for vortex-type equations coupled with Higgs fields* (I), Math. Reports, **3 (53)** (2001), *4*, 425 – 444.

[6] *The Kobayashi-Hitchin correspondence for vortex-type equations coupled with Higgs fields* (II), Math. Reports, **4 (54)** (2002), *1*, 123 – 142.

[7] *On the $(G, \rho)$-monopole equations*, Revue Roumaine Math. Pures et Appliquées, **48** (2003), *3*, 311 – 326.

[8] *Stability in linear problems*, Preprint MI-2003-22, University of Leiden, 2003.

[9] *Quotients in algebraic and symplectic geometry*, Anual Report 2002, Institute of Mathematics, University of Leiden, 5 – 12.

[10] *Rings of invariants for representations of quivers* (joint work with Mihai Halic), C. R. Acad. Sci. Paris, Ser.I **340** (2005), 135 – 140.

[11] *Un studiu privind învăţarea spaţiilor vectoriale (Teaching vector spaces)* (joint work with Cristian Voica), Proceedings CAIM 13, Romai Educational Journal **1** (2006), 64 – 72.

[12] *Reprezentări mentale ale conceptelor de algebră liniară (Mental representations of basic linear algebra notions)* (joint work with Cristian Voica), Bull. SSM, Proceedings of the RMS Conference, mai 2006.

[13] *Teaching Linear Algebra to students in Informatics* (joint work with Cristian Voica), Proceedings CAIM 14, Romai Educational Journal **2** (2007), 74 – 77.

[14] *Modele matematice utilizate pentru evaluarea în teren a peisajului (Mathematical models in terrain landscape assessment)*, (joint work with Ileana Pătru-Stupariu), Comunicari de Geografie, **XI** (2007), 517 – 519.

[15] *GIT-stability for a class of linear systems*, Math. Reports, **9 (59)** (2007), *4*, 377 – 384.

[16] *A compactness criterion for quotients associated to linear actions*, Analele Universităţii din Bucureşti, Matematica, **LVI** (2007), 221 – 230.

[17] *Some properties of the* $(G, \rho)$*-monopoles*, Bull. of the Transilvania University of Braşov, series B, **14 (49)** (2007), 315 – 323.

[18] *Representations of quivers and associated gauge-theoretical problems*, Bull. of the Transilvania University of Braşov, series III, **1 (50)** (2008), 387 – 394.

[19] *Landscape metrics for assessment of mountain landscape using GIS applications* (with Ileana Pătru-Stupariu and Roxana Cuculici), Revista de Geomorfologie, **11** (2009).

[20] *Geometric techniques in quantifying landscape irregularities* (with Ileana Pătru-Stupariu and Roxana Cuculici), in J. Breuste, M. Kozova, M. Finka (Eds.): European Landscapes in Transformation Challenges for Landscape Ecology and Management, ISBN: 978-80-227-3100-3 [European IALE Conference 2009, Salzburg, Austria, July, 12-16, 2009].

[21] *Geometric approaches to computing 3D-landscape metrics* (with Ileana Pătru-Stupariu and Roxana Cuculici), Landscape Online, **24** (2010), 1-12.

[22] *Modele matematice utilizate pentru evaluarea vizuala in situ a peisajului studiu de caz orasul Sinaia (Mathematical models for visual landscape assessment. Case study: Sinaia)* (with Ileana Pătru-Stupariu and Alina Huzui), Forum Geografic, Studii si cercetari de geografie si protectia mediului, **9** (2010), 133–138.

[23] *Contribution of global indicators to landscape change modeling. Case study: Prahova Valley (Romanian Carpathians and Subcarpathians)* (with Ileana Pătru-Stupariu, Roxana Cuculici and Alina Huzui), International Journal of the Physical Sciences, **6** (2011), 534-539.

[24] *The integration of historical maps in landscape reconstruction. Case study: Sinaia, Romania* (with Ileana Pătru-Stupariu, Roxana Cuculici and Alina Huzui), Journal of Maps, **v 2011** (2011), 206–220.

[25] *Filtrations, weights and quiver problems*, Linear Algebra and Its Applications, **436** (2012), 648-658.

[26] *A quiver approach to studying orbit spaces of linear systems*, System & Control Letters, submitted.

## PhD Thesis

[27] *The Kobayashi-Hitchin correspondence for vortex-type equations coupled with Higgs fields*, Zürich, 1998.

## Talks

[1] *The Kobayashi-Hitchin correspondence for projective vortex-type equations coupled with Higgs fields*, The fourth international Workshop on differential geometry and its applications, Braşov, 1999.

[2] *Stable augmented bundles over Kähler manifolds*, Centennial Gh. Vrănceanu, Bucharest, 2000.

[3] *Vortex-type equations coupled with Higgs fields*, Zweites deutsch-rumänisches Seminar über Geometrie, Dortmund, 2000.

[4] *Teaching vector spaces* (with C. Voica), The 13th Conference on Applied and Industrial Mathematics, CAIM 2005, Piteşti, 2005.

[5] *Difficulties in understanding vector spaces* (with Cristian Voica), MASSEE International Congress on Mathematics, Paphos, Cyprus, 2006.

[6] *Reprezentări mentale ale conceptelor de algebră liniară (Mental representations of basic linear algebra notions)*, RMS (Romanian Mathematical Society) Conference, Bucharest, 2006.

[7] *Modele matematice utilizate pentru evaluarea în teren a peisajului (Mathematical models in terrain landscape assessment)* (with Ileana Pătru-Stupariu), Annual workshop

of the Faculty of Geography, University of Bucharest, 2006.

[8] *Concepte de stabilitate pentru reprezentări de tolbe (Stability concepts for representations of quivers)*, Euler anniversary session, Faculty of Mathematics, University of Bucharest, 2007.

[9] *Utilizarea limbajului informatic în predarea algebrei liniare şi a geometriei (Using informatics in linear algebra and geometry teaching)*, Workshop on Romanian university education , Constanţa, 2007.

[10] *Some properties of the* $(G, \rho)$*-monopoles*, Riemannian Geometry and Applications, Dedicated to the Memory of Prof. Radu Roşca, Braşov, 2007.

[11] *Reprezentări şi limbaje în algebra liniară (Representations and languages in linear algebra)* (with Cristian Voica), RMS Conference, Bucharest, 2007.

[12] *Representations of quivers and associated gauge-theoretical problems*, Riemannian Geometry and Applications, Dedicated to the 65-th birthday of Prof. Dr. Bang-Yen Chen, Braşov, 2008.

[13] *Landscape metrics for assessment of mountain landscape using GIS applications* (with Ileana Pătru-Stupariu and Roxana Cuculici), IAG Regional Conference on Geomorphology: Landslides, Floods and Global Environmental Change in Mountain Regions, Braşov, 2008.

[14] *Geometric techniques in quantifying landscape irregularities* (with Ileana Pătru-Stupariu und Roxana Cuculici), IALE (International Association for Landscape Ecology) Conference, Salzburg, 2009.

[15] *On the use of discrete-geometry differential operators in the study of landscapes* (with Ileana Pătru-Stupariu und Roxana Cuculici), GEOBIA (Geographic Object Based Image Analysis), Gent, 2010.

[16] *Algorithms for curvature calculation in Digital Terrain Modeling*, Mittagsseminar, Theory of Combinatorial Algorithms, Institute of Theoretical Computer Science, ETH Zürich, 2012.

## Research projects

Responsible / PI of the RO team:

[1] *Improved wind energy assessment based on coupled wind, terrain and vegetation modeling (WindLand)*, 2013-2015, Romanian-Swiss Research Programme.

Research team member of the projects:

[2] *Project EAGER (European algebraic geometry research and training network)*, IHP Research Network.

[3] *Project Complex Geometry*, Swiss National Foundation. Project manager: Prof. dr. Ch. Okonek.

[4] *Invarianţi ai Spaţiilor Riemann şi Aplicaţii (Riemann spaces invariants and applications)*, CNCSIS (National University Research Council, Romania). Project manager: Prof. dr. I. Mihai.

[5] *Geometrie Riemannianǎ şi Aplicaţii (Riemannian geometry and applications)*, CEEX. Project manager: Prof. dr. I. Mihai.

[6] *Elaborarea şi implementarea unui algoritm de evaluare şi prognozǎ peisagisticǎ. Aplicaţie la sectorul montan şi subcarpatic al Vǎii Prahova (Development and implementation of an algorithm for landscape assessment and prognosis. Application to the mountainous and subcarpathian sector of the Prahova Valley)*, CNCSIS. Project manager: Prof. dr. I. Pătru-Stupariu.

# Teaching activity

## Courses

*Introduction in the mathematical gauge theory* (Zürich University)
*Geometry of fibre bundles* (Zürich University)
*Algebraic Topology* (Zürich University)
*Geometry* (University of Bucharest)
*Differential geometry of curves and surfaces* (University of Bucharest)
*Computational Geometry* (University of Bucharest)
*Geometric Modelling* (University of Bucharest)

# Organizational activities

1. Secretary of the Chair of Geometry, Faculty of Mathematics, Bucharest University (1993-1994)
2. Workshop "Complex Geometry-relations with the Mathematical Physics" , Mathematisches Forschungsinstitut Oberwolfach (as editor of the abstracts-booklet) August 24-30, 1997.
3. Editorial Secretary of *Annals of the University of Bucharest (Mathematical Series)* (since 2009).