

Curriculum Vitae

Personal data

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Education

2000 - Ph.D. in Physics (awarded *with Distinction*), Columbia University.
Thesis: *Quantum effects in D-brane geometry*.
Thesis advisor: Prof. *Brian R. Greene*. Awarded by joint Physics / Mathematics committee,
presided by Profs. *Eric Weinberg* (physics) and *John Morgan* (mathematics).
1997 - M. Phil. & M. A. in Physics, Columbia University in the city of New York

Research and work experience

2020-present Senior Researcher (degree 1), Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania
2017-2020 Tenure-track Research Fellow, IBS-CGP, Pohang, Korea
2015-2017 Senior Scientist, IBS-CGP, Pohang, Korea (IBS grant IBS-R003-S1, *Constructive string field theory of open-closed topological B-type strings*)
2013-2015 Tenure-track Research Fellow, Center for Geometry and Physics, Institute for Basic Science (IBS-CGP), Pohang, Korea
2011-2013 Tenured Researcher, Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania
2010-2011 Research Associate, Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania
2004-2010 Lecturer (tenured), Trinity College Dublin, Ireland
2004-2004 Research Associate, Institute for Advanced Study, Princeton (supervisor: Prof. Edward Witten)
2003-2004 Research Associate, University of Wisconsin-Madison (supervisor: Prof. Albrecht Klemm)
2002-2003 Post-doctoral Research Associate, Institute for Physics, Humboldt University, Berlin (supervisor: Prof. Albrecht Klemm)
2000-2002 Post-doctoral Research Associate, C.N Yang Institute for Theoretical Physics, State University of New York, Stony Brook (supervisor: Prof. Martin Rocek)
1997-2000 Research assistant, Columbia University, New York. Work on the subject *Calabi-Yau compactifications with D-branes, (0,2) sigma models and F-theory*. (supervisor: Prof. Brian R. Greene)

Honors & Awards

1994	Special prize from the Romanian ministry of Education
1997-1999	Pfister Fellowship (USA)
2017	“ <i>Stefan Procopiu</i> ” prize of the Romanian Academy for my work in 2015 on 8-dimensional compactifications of 11-dimensional supergravity.

Grants and funding

2020-onward	supported by the grant PN 19060101/2019-2022, Romania
2017-2020	supported by the IBS research grant IBS-R003-D1, Korea
2015-2017	P.I. for the Senior Scientist research grant IBS-R003-S1: “Constructive string field theory of open-closed topological B-type string”, IBS, Korea
2013-2015	supported by the IBS research grant IBS-R003-G1, Korea
2010-2013	Supported by grants PN 09370102/2009 and PN-II-ID-PCE contr. nr. 50/2011
2007-2009	P.I. for two grants from the Irish Research Council for Science, Engineering and Technology (IRCSET) supporting my former graduate students
2005-2008	Member and administrative manager of the Trinity College, Dublin node of the Marie Curie Network “Constituents, Fundamental Symmetries and Forces of the Universe” (MRTN-CT-2004-005104)
2005-2006	P.I. for a Trinity College Start-up grant
2003	supported by a DFG grant (Germany)
1997-2004	supported by group DOE grants (USA)

Teaching experience

- 2005 - 2010 (as Lecturer in Trinity College Dublin): taught course on the following subjects:

- 1st year level:
 - Mathematics for Students of Natural Science (1 year course)
 - Methods of Mathematical Physics (1 year course);
- 3rd-4th year level:
 - General Relativity (1 year course)
 - Statistical Physics ($\frac{1}{2}$ year course)
 - Differential Topology (1 year course), course created and developed by me.
 - Algebraic Geometry ($\frac{1}{2}$ year course), course created and developed by me.

- Teaching Assistant at Columbia University 1996 -1997.

Mentorship

- 2015-2017 Academic supervisor for three post-doctoral researchers (Mirela Babalic, Dmitry Doryn, Mehdi Tavakol) at IBS-CGP, Pohang, Korea (as part of the Senior Scientist grant IBS-R003-S1)
- 2011-2013 Research mentor for two early career scientists (Mirela Babalic and Ioana Coman) within the Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania

- 2007-2009 Academic supervisor for two graduate students at Trinity College Dublin (Daniel McNamee and Alexander Zejak) who completed their M.Sc. degrees in 2009

Conference and seminar organization

- 2005 *12th Irish Quantum Field Theory Meeting*, Trinity College Dublin, Ireland
- 2006 *Weekly Colloquium*, Trinity College Dublin, Ireland
- 2007 *Conference on Derived Categories, Non-commutative Geometry and Strings*, Trinity College Dublin, Ireland
- 2010-2012, Organizer of the *Workgroup and seminar on string theory* (comprising Ioana Coman, Mirela Babalic, Andrei Micu, Cezar Condeescu) at the Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania
- 2013-present, Initiator and research coordinator of the *Geometry and Physics Seminar*, a joint seminar between the Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR) and the Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania (<http://events.theory.nipne.ro/gap/index.php/seminar>)
- July 6-10, 2015, Coorganizer of the *Geometry and Physics XIII Conference – Derived Geometry*, IBS-CGP, Pohang, Korea
- January 6-14, 2016, Co-organizer of the thematic program *Mathematics of Quantum Field Theory* at IBS-CGP, Pohang, comprising two conferences: *String field theory of the B-model* (January 6-9, 2016) and *Homotopical Methods in Quantum Field Theory* (January 11-14, 2016), IBS-CGP, Pohang, Korea
- Oct 2015-Oct 2017, Organizer of the *Workgroup on Landau-Ginzburg models* (with the three post-doctoral researchers in my Senior Scientist project), IBS-CGP, Pohang, Korea
- Sept 11-15 2017, Organizer of the conference *String Field Theory of Landau-Ginzburg models*, IBS-CGP, Pohang, Korea
- June 10-14 2019, Co-organizer of *Topological String Theory and related topics*, CERN
- Sept. 2-6 2019, Member of the scientific advisory board of the *Bucharest Conference on Geometry and Physics*, Bucharest

Referee, editorial and grant reviewer work

- Referee for Journal of High Energy Physics, Journal of Geometry and Physics, Communications in Mathematical Physics, Fortschritte der Physik, International Journal of Geometric Methods in Modern Physics, SIGMA etc.
- Editor for “Frontiers in Physics”.
- External reviewer for the Engineering and Physical Sciences Research Council of the United Kingdom (UK EPSRC) grant applications during 2005-2010,
- Since 2017, I am an external reviewer for scientific grant applications with the Ministry of Research and Innovation of Romania (for grants funded by the European Union).

Research interests

Mathematical physics, string theory, differential and complex geometry, algebraic geometry, symplectic geometry.

Other skills

- Extensive experience in symbolic computing (Mathematica, Maple, Sage, specialized toric geometry/convex geometry software) and numerical computing (C, Fortran etc).
- Knowledge of Linux/UNIX at administrator level.
- Experience in creating and managing symbolic computation servers.
- Work with the Lattice QCD group of Columbia University during the summer of 1997 (supervisor: Prof. Norman Christ).

Published papers

1. E. M. Babalic, C. I. Lazaroiu, *The infrared behavior of tame two-field cosmological models*, Nucl. Phys. B 983 (2022), 115929
2. C. I. Lazaroiu, *Dynamical renormalization and universality in classical multifield cosmological models*, Nucl. Phys. B 983 (2022), 115940
3. C. I. Lazaroiu, *Hesse manifolds and Hessian symmetries of multifield cosmological model*, Rev. Roumaine Math. Pures Appl. 66 (2021), 2, 329–345
4. C. I. Lazaroiu, C. S. Shahbazi, *Four-dimensional geometric supergravity and electromagnetic duality: a brief guide for mathematicians*, Rev. Roumaine Math. Pures Appl. 66 (2021), 2, 265–306.
5. V. Cortes, C. I. Lazaroiu, C. Shahbazi, *Spinors of real type as polyforms and the generalized Killing equation*, Math. Z. (2021). <https://doi.org/10.1007/s00209-021-02726-6>
6. V. Cortes, C. I. Lazaroiu, C. S. Shahbazi, *$N=1$ Geometric Supergravity and Chiral Triples on Riemann Surfaces*, Comm. Math. Phys. 375 (2020) 429–478.
7. L. Anguelova, E. M. Babalic, C. I. Lazaroiu, *Noether symmetries of two-field cosmological models*, arXiv:1910.08441 [hep-th], AIP Conf. Proc. 2218 (2020) 1, 050005.
8. C. I. Lazaroiu, C. S. Shahbazi, *Real pinor bundles and real Lipschitz structures*, Asian Journal of Mathematics, Vol. 23, No. 5 (2019), pp. 749-836, arXiv:1606.07894.
9. L. Anguelova, E. M. Babalic, C. I. Lazaroiu, *Hidden symmetries of two-field cosmological models*, JHEP 09 (2019) 007.
10. L. Anguelova, E. M. Babalic, C. I. Lazaroiu, *Two-field cosmological α -attractors with Noether symmetry*, JHEP 1904 (2019) 148, arXiv:1809.10563 [hep-th].
11. E. M. Babalic, C. I. Lazaroiu, *Cosmological flows on hyperbolic surfaces*, Facta Universitatis, Series: Physics, Chemistry and Technology, Vol. 17, No 1, Special Issue, 2019, pp. 1 – 9, arXiv:1810.00441 [hep-th].
12. C. I. Lazaroiu, M. Tavakol, *B-type Landau-Ginzburg models with one-dimensional target*, Journal of Physics: Conf. Series 1194 (2019) 012066.

13. E. M. Babalic, D. Doryn, C. I. Lazaroiu, M. Tavakol, *B-type Landau- Ginzburg models on Stein manifolds*, Journal of Physics: Conference Series 1194 (2019) 012010.
14. E. M. Babalic, D. Doryn, C. I. Lazaroiu, M. Tavakol, *A differential model for B-type Landau-Ginzburg theories*, Geometric Methods in Physics XXXVI pp. 207-214, Trends in Mathematics, Birkhauser 2019.
15. C. I. Lazaroiu, C. S. Shahbazi, *On the spin geometry of supergravity and string theory*, Geometric Methods in Physics XXXVI pp 229-235, Trends in Mathematics, Birkhauser, 2019.
16. C. I. Lazaroiu, C. S. Shahbazi, *The global formulation of generalized Einstein- Scalar-Maxwell theories*, Springer Proceedings in Mathematics & Statistics, Quantum Theory and Symmetries with Lie Theory and Its Applications in Physics, Vol. 2 (2018), 217--231.
17. E. M. Babalic, C. I. Lazaroiu, *Generalized two-field α -attractors from the hyperbolic triply-punctured sphere*, Nuclear Physics B 937 (2018) 434-477.
18. C. I. Lazaroiu, C. S. Shahbazi, *Generalized α -attractor models from geometrically finite hyperbolic surfaces*, Nucl. Phys. B 936 (2018) 542-596.
19. C. Lazaroiu, C. S. Shahbazi, *Complex Lipschitz structures and bundles of complex Clifford modules*, Differential Geometry and its Applications, 61 (2018) 147-169.
20. E. M. Babalic, C. I. Lazaroiu, *Two-field cosmological models and the uniformization theorem*, Springer Proceedings in Mathematics & Statistics, Quantum Theory and Symmetries with Lie Theory and Its Applications in Physics, Vol. 2 (2018), 233 - 241
21. C. I. Lazaroiu, M. Babalic, D. Doryn, M. Tavakol, *On B-type open-closed Landau-Ginzburg theories defined on Calabi-Yau Stein manifolds*, Commun. Math. Phys. 362 (2018), 129–165
22. C. I. Lazaroiu, C. S. Shahbazi, *Section sigma models coupled to symplectic duality bundles on Lorentzian four-manifolds*, Journal of Geometry and Physics, Vol. 128 (2018), 58–86.
23. E. M. Babalic, C. I. Lazaroiu, *Generalized α -attractor models from elementary hyperbolic surfaces*, Advances in Mathematical Physics (Article ID 7323090), Vol. 2018 (2018), 1-24
24. C. I. Lazaroiu, M. Babalic, D. Doryn, M. Tavakol, *Differential models for B-type open-closed topological Landau-Ginzburg theories*, Commun. Math. Phys. 361 (2018), 1169–1234.
25. C. I. Lazaroiu, C. S. Shahbazi, *Generalized Einstein-Scalar-Maxwell theories and locally geometric U-folds*, Rev. Math. Phys. 30 (2018), 1850012.
26. C. I. Lazaroiu, C. S. Shahbazi, *Geometric U-folds in four dimensions*, Journal of Physics A: Mathematical and Theoretical, 51 (2018) 1, 015207.
27. C. I. Lazaroiu, E. M. Babalic, I. A. Coman, *Geometric algebra techniques in flux compactifications*, Advances in High Energy Physics, 7292534 (2016).
28. E. M. Babalic, C. I. Lazaroiu, *Foliated backgrounds for M-theory compactifications (II)*, Rom. J. Phys. 61 (2016) No. 1–2.

29. E. M. Babalic, C. I. Lazaroiu, *Foliated backgrounds for M-theory compactifications (I)*, TIM14 Physics Conference - Physics without frontiers AIP Conf. Proc. 1694 (2015) 020007.
30. E. M. Babalic, C. I. Lazaroiu, *Foliated eight-manifolds for M-theory compactifications*, JHEP 01 (2015) 140.
31. E. M. Babalic, C. I. Lazaroiu, *Singular foliations for M-theory compactifications*, JHEP 03 (2015) 116.
32. E. M. Babalic, C. I. Lazaroiu, *Internal circle uplifts, transversality and stratified G-structures*, JHEP 11 (2015) 174.
33. E. M. Babalic, C. I. Lazaroiu, *The landscape of G-structures in eight-manifold compactifications of M-theory*, JHEP 11 (2015) 07.
34. C. I. Lazaroiu, E. M. Babalic, I. A. Coman, *The geometric algebra of supersymmetric backgrounds*, String-Math 2012 - Proceedings of the AMS, Symposia in Pure Mathematics, Vol 90 (2015) pp. 227–237.
35. E. M. Babalic, C. I. Lazaroiu, *A generalization of Calabi-Yau fourfolds arising from M-theory compactifications*, Bulg. J. Phys. 41 (2014) 109-122.
36. C. I. Lazaroiu, E. M. Babalic, *Geometric algebra techniques in flux compactifications (II)*, JHEP 06 (2013) 054 .
37. C. I. Lazaroiu, E. M. Babalic, I. A. Coman, *The geometric algebra of Fierz identities in arbitrary dimensions and signatures*, JHEP 09 (2013) 156.
38. E. M. Babalic, I. A. Coman, C. I. Lazaroiu, *A unified approach to Fierz identities*, AIP Conf. Proc. 1564 (2013) 57.
39. E. M. Babalic, I. A. Coman, C. Condeescu, C. I. Lazaroiu, A. Micu, *On $N = 2$ compactifications of M-theory to AdS3 using geometric algebra techniques*, AIP Conf. Proc. 1564, 63 (2013).
40. E. M. Babalic, C. I. Lazaroiu, *Revisiting eight-manifold flux compactifications of M-theory using geometric algebra techniques*, Rom. Journ. Phys. 58 (2013) 5–6, 414–422.
41. C. I. Lazaroiu, E. M. Babalic, *Geometric algebra and M-theory compactifications*, Rom. Journ. Phys., 58 (2013) 5–6, 609–616.
42. C. I. Lazaroiu, D. McNamee, C. Sämann, *Generalized Berezin-Toeplitz quantization of Kahler supermanifolds*, JHEP 05 (2009) 055.
43. C. I. Lazaroiu, D. McNamee, C. Sämann, *Generalized Berezin quantization, Bergman metrics and fuzzy Laplacians*, JHEP 0809 (2008) 059.
44. C. I. Lazaroiu, *Graded D-branes and skew-categories*, JHEP 0708 (2007) 088.
45. C. I. Lazaroiu, *Non-commutative moduli spaces of topological D-branes*, Fortsch. Phys. 54 (2006) 430 – 434.
46. M. Herbst, C. I. Lazaroiu, W. Lerche, *D-brane effective action and tachyon condensation in topological minimal models*, JHEP 0503 (2005) 078.

47. M. Herbst, C. I. Lazaroiu, *Localization and traces in open-closed topological Landau-Ginzburg models*, JHEP 0505 (2005) 044.
48. C. I. Lazaroiu, *On the boundary coupling of topological Landau-Ginzburg models*, JHEP 0505 (2005) 037.
49. M. Herbst, C. I. Lazaroiu, W. Lerche, *Superpotentials, A(infinity) relations and WDVV equations for open topological strings*, JHEP 0502 (2005) 071.
50. C. I. Lazaroiu, *On the non-commutative geometry of topological D-branes*, JHEP 0511 (2005) 032.
51. K. Landsteiner, C. I. Lazaroiu, R. Tatar, *Chiral field theories, Konishi anomalies and matrix models*, JHEP 0402 (2004) 044.
52. K. Landsteiner, C. I. Lazaroiu, *On $Sp(0)$ factors and orientifolds*, Phys. Lett. B 588 (2004) 210–216.
53. K. Landsteiner, C. I. Lazaroiu, R. Tatar, *Puzzles for matrix models of chiral field theories*, Fortsch. Phys. 52 (2004) 590–595.
54. K. Landsteiner, C. I. Lazaroiu, R. Tatar, *(Anti)symmetric matter and superpotentials from IIB orientifolds*, JHEP 0311 (2003) 044.
55. K. Landsteiner, C. I. Lazaroiu, R. Tatar, *Chiral field theories from conifolds*, JHEP 0311 (2003) 057.
56. A. Klemm, K. Landsteiner, C. I. Lazaroiu, I. Runkel, *Constructing gauge theory geometries from matrix models*, JHEP 0305 (2003) 066.
57. C. I. Lazaroiu, *D-brane categories*, Int. J. Mod. Phys. A 18 (2003) 5299–5335.
58. L. Anguelova, C. I. Lazaroiu, *Enhanced gauge symmetry from 'toric' $G(2)$ cones*, Fortsch. Phys. 51 (2003) 543–550.
59. K. Landsteiner, C. I. Lazaroiu, *Geometric regularizations and dual conifold transitions*, JHEP 0304 (2003) 028.
60. C. I. Lazaroiu, *Holomorphic matrix models*, JHEP 0305 (2003) 044.
61. C. I. Lazaroiu, L. Anguelova, *M theory compactifications on certain 'toric' cones of $G2$ holonomy*, JHEP 0301 (2003) 066.
62. C. I. Lazaroiu, *An Analytic torsion for graded D branes*, JHEP 0209 (2002) 023.
63. L. Anguelova, C. I. Lazaroiu, *Domain walls of $N=2$ supergravity in five-dimensions from hypermultiplet moduli spaces*, JHEP 0209 (2002) 053.
64. C. I. Lazaroiu, R. Roiban, *Gauge fixing, semiclassical approximation and potentials for graded Chern-Simons theories*, JHEP 0203 (2002) 022.
65. C. I. Lazaroiu, R. Roiban, D. Vaman, *Graded Chern-Simons field theory and graded topological D-branes*, JHEP 0204 (2002) 023.
66. C. I. Lazaroiu, R. Roiban, *Holomorphic potentials for graded D-branes* JHEP 0202 (2002) 038.

67. L. Anguelova, C. I. Lazaroiu, *M theory on 'toric' $G(2)$ cones and its type II reduction*, JHEP 0210 (2002) 038.
68. B. R. Greene, C. I. Lazaroiu, *Collapsing D-branes in Calabi-Yau moduli space: I*, Nucl. Phys. B 604 (2001) 181–255.
69. C. I. Lazaroiu, *Collapsing D-branes in one parameter models and small / large radius duality*, Nucl. Phys. B 605 (2001) 159–191.
70. C. I. Lazaroiu, *Generalized complexes and string field theory*, JHEP 0106 (2001) 052.
71. C. I. Lazaroiu, *Graded Lagrangians, exotic topological D-branes and enhanced triangulated categories*, JHEP 0106 (2001) 064.
72. C. I. Lazaroiu, *On the structure of open - closed topological field theory in two-dimensions*, Nucl. Phys. B 603 (2001) 497–530.
73. C. I. Lazaroiu, *String field theory and brane superpotentials*, JHEP 0110 (2001) 018.
74. C. I. Lazaroiu, *Unitarity, D-brane dynamics and D-brane categories*, JHEP 0112 (2001) 031.
75. C. Beasley, B.R. Greene, C.I. Lazaroiu, M.R. Plesser, *D3-branes on partial resolutions of Abelian quotient singularities of Calabi-Yau threefolds*, Nucl. Phys. B 566 (2000) 599–640.
76. B. R. Greene, C. I. Lazaroiu, P. Yi, *D particles on $T^{**4} / Z(n)$ orbifolds and their resolutions*, Nucl. Phys. B 539 (1999) 135–165.
77. B. R. Greene, C. I. Lazaroiu, M. Raugas, *D-branes on nonAbelian threefold quotient singularities*, Nucl. Phys. B 553 (1999) 711–749.
78. M. Bershadsky, T. M. Chiang, B. R. Greene, A. Johansen, C. I. Lazaroiu, *F-theory and linear sigma models*, Nucl. Phys. B 527 (1998) 531–570.

Preprints

1. C. I. Lazaroiu, C. S. Shahbazi, *The geometry and DSZ quantization of four-dimensional supergravity*, arXiv:2101.07778
2. C. Lazaroiu, C. S. Shahbazi, *The duality covariant geometry and DSZ quantization of abelian gauge theory*, arXiv:2101.07236
3. C. I. Lazaroiu, M. Tavakol, *B-type topological Landau-Ginzburg models over general non-compact Riemann surfaces*, available at: <https://cgp.ibs.re.kr/archive/preprints>
4. C. I. Lazaroiu, C. S. Shahbazi, *Spin⁰ structures and semilinear (s)pinor bundles*, arXiv:1809.09084 [math.DG]
5. D. Doryn, C. I. Lazaroiu, M. Tavakol, *Matrix factorizations over elementary divisor domains*, arXiv:1802.07635 [math.AC].
6. D. Doryn, C. I. Lazaroiu, M. Tavakol, *Elementary matrix factorizations over Bezout domains*, arXiv:1801.02369 [math.AG].
7. D. Doryn, C. I. Lazaroiu, *Non-degeneracy of cohomological traces for general Landau-Ginzburg models*, arXiv:1802.06261 [math.AG].

Seminar and conference talks

1. *Dynamical approximations in multifield cosmological models*, talk in the workshop “SEENET-MTP BWAM22”, Belgrade University, September 1-4, 2022.
2. *The geometry and DSZ quantization of four-dimensional supergravity*, invited talk at the conference “Geometric Structures and Supersymmetry 2022”, The Arctic University of Norway, Tromsø, August 23-26, 2022
3. *The DSZ quantization and self-dual formulation of four-dimensional supergravity*, invited talk in the thematic program „Higher Structures and Field Theory”, ESI Vienna, August 1-26, 2022
4. *The holomorphic theory of B-type Landau-Ginzburg models*, talk in the conference “The Geometry and Algebra of Landau-Ginzburg models”, Fields Institute, Univ. of Toronto, Sep 16-20, 2019.
5. *Hessian symmetries of multifield cosmological models*, talk in the Bucharest Conference on Geometry and Physics, IMAR, Bucharest, Sep. 2-6, 2019.
6. *The general theory of B-type Landau-Ginzburg models*, talk in the conference “Topological String Theory and Related Topics”, CERN, Geneva, 3-14 June 2019.
7. *“Hidden symmetries of multifield cosmological models”*, talk in the conference XIII. International Workshop Lie Theory and Its Applications in Physics, Varna, Bulgaria, 17-23 June 2019.
8. *Hesse manifolds and Hesse functions*, seminar talk, IMAR, Bucharest, Romania, June 25, 2019.
9. *Open-closed B-type LG models with Stein manifold targets*, seminar talk, Geometry and Physics Seminar, IMAR, Bucharest, Romania, Mar. 28, 2019
10. *Hessian symmetries of multifield cosmological models*, seminar talk, Geometry and Physics Seminar, IFIN-HH, Bucharest, Romania, Mar. 21, 2019.
11. *Hessian symmetries of multifield cosmological models*, seminar talk, Dept. of Mathematics, Univ. of Hamburg, Germany, Mar. 12, 2019.
12. *B-type Landau-Ginzburg models with Riemann surface target*, seminar talk, Dept. of Mathematics, Univ. of Hamburg, Germany, Mar. 11, 2019.
13. *Hessian symmetries of multifield cosmological models*, seminar talk, INRNE, Sofia, Bulgaria, Mar. 7, 2019.
14. *Non-degeneracy of cohomological traces for general Landau-Ginzburg models* Geometry and Physics Seminar, IMAR, Buchrest, Feb. 26, 2019.
15. *B-type Landau-Ginzburg models on open Riemann surfaces*, Geometry & Physics seminar, Department of Theoretical Physics, IFIN-HH, Bucharest-Magurele, Jul. 17, 2018.

16. *B-type Landau-Ginzburg models on open Riemann surfaces*, at “The 32nd International Colloquium on Group Theoretical Methods in Physics (Group 32)”, Prague, Jul. 9-13, 2018.
17. *B-type open-closed topological Landau-Ginzburg models on Stein manifolds*, seminar talk, Dept. of Mathematics, Univ. of Vienna, Jul. 5, 2018.
18. *Spin^o structures*, seminar talk, Dept. of Mathematics, Univ. of Hamburg, Jun. 25, 2018.
19. *Matrix Factorizations over Bézout and Elementary Divisor Domains*, Geometry Seminar, Simion Stoilow Institute for Mathematics of the Romanian Academy, Bucharest, Mar. 1, 2018.
20. *Matrix Factorizations over Bézout and Elementary Divisor Domains*, at the Conference “Quantum spacetime ’18” (QST-18), Sofia, Bulgaria, Feb. 19-23, 2018.
21. *Section sigma models*, Geometry & Physics Seminar, IFIN-HH, Bucharest, Feb. 16, 2018.
22. *Differential models for B-type open-closed Landau-Ginzburg theories*, in the "Pacific Rim Complex-Symplectic Geometry Conference", IBS-CGP, Pohang, Korea, Jul.31-Aug.4, 2017.
23. *Real Lipschitz structures*, “XXXVIIth Workshop on Geometric Methods in Physics”, Bialowieza, Jul. 1-7, 2017.
24. *Einstein Scalar Maxwell theories with non-trivial duality bundles*, at the “Xth International Symposium on Quantum Theory and Symmetries and XIIth International Workshop on Lie Theory and Its Applications in Physics”, Varna, June. 19-25, 2017.
25. *Einstein-Section-Maxwell theories*, seminar talk, Dept. of Physics, Leibniz University, Hannover, Jun. 28, 2017.
26. *Differential models for Landau-Ginzburg Theories*, seminar talk, Dept. of Mathematics, University of Melbourne, Jan. 18, 2017.
27. *Differential models for open-closed Landau-Ginzburg theories*, talk at the conference “Topology in Australia and South Korea”, University of Melbourne, May 1-5, 2017.
28. *Differential models for Landau-Ginzburg theories*, seminar talk, Dept. of Mathematics, University of Melbourne, Jan. 19, 2017.
29. *Generalized alpha-attractor models and the uniformization theorem*, at the "APCTP 2016 Workshop on Frontiers of Physics: 10 perspectives on particle physics", APCTP, Postech, Pohang, Dec. 12-16, 2016.
30. *Generalized Einstein-Scalar-Maxwell theories and locally geometric U-folds*, at the conference "Strings and Geometry", KIAS, Seoul, Oct. 24-26, 2016.
31. *Topological obstructions for bundles of Clifford modules*, Geometry & Physics Seminar, Department of Theoretical Physics of NIPNE, Bucharest, Jul. 27, 2016.
32. *U-folds, section sigma models and fibered supergravity*, Geometry&Physics Seminar, Department of Theoretical Physics of NIPNE, Bucharest, Jul. 14, 2016.

33. *Real Lipshitz structures, real pinor bundles and Dirac operators*, Institute de Physique Theorique, CEA Saclay, Paris, May 19, 2016.
34. *Real Lipshitz structures, real pinor bundles and Dirac operators*, at the conference “Superstring solutions, supersymmetry and geometry”, Benasque, Spain, May 1-7, 2016.
35. *Foliations, non-commutative geometry and exceptional generalised geometry*, at the conference “Duality and novel geometry in M-theory”, APCTP, Pohang, South Korea, Jan. 26 - Feb. 4, 2016.
36. *Bubbling solutions of M-theory, polar G-manifolds and symmetric Riemann surfaces*, Geometry&Physics Seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Oct. 9, 2015.
37. *The landscape of G-structures in eight-manifold compactifications of M-theory*, Geometry&Physics Seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Sep. 30, 2015.
38. *Foliated backgrounds, stratifications and non-commutative geometry in M-theory compactifications*, Theory Seminar, IPNL Lyon, France, Jun. 25, 2015.
39. *M-theory, foliations and stratified G-structures*, IPhT Saclay, Paris, Jun. 23, 2015.
40. *Foliated eight-manifolds for M-theory compactification*, Geometry & Physics seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Jan. 30, 2015.
41. *Compactification in Superstring and M-theory*, Univ. of Nis, Jan. 21, 2015.
42. *Fierz potentials and generalized G-structures*, Geometry&Physics seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Jan. 9, 2015.
43. *An M-theoretic generalization of Calabi-Yau fourfolds*, invited seminar, KIAS, Seoul , Apr. 14, 2014.
44. *Generalized Calabi-Yau fourfolds*, Simion Stoilow Institute for Mathematics of the Romanian Academy, Mar. 20, 2014.
45. *Towards generalizing F theory*, plenary talk at the workshop on “B model aspects of Gromov-Witten Theory”, Univ. of Michigan at Ann Arbor, Mar. 3-7, 2014.
46. *Reconstruction theorems for flux compactifications*, Geometry&Physics Seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Feb. 21, 2014.
47. *The geometric algebra of metric cones and supersymmetry*, Geometry&Physics Seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, Sep. 20, 2013.
48. *Shades of a dream: String Theory, Mathematics and the unity of science*, Geometry&Physics Seminar, Department of Theoretical Physics of IFIN-HH, Bucharest, May 8, 2013.
49. *Shades of a dream: String Theory, Mathematics and the unity of science*, Ajou University, Seoul, Mar. 29, 2013.
50. *The Geometric Algebra of Fierz Identities*, Department of Theoretical Physics of IFIN-HH, Bucharest, Feb. 14, 2013.

51. *Geometric algebra techniques in flux compactifications*, Perimeter Institute, Univ. of Waterloo, Ontario, Canada, Nov. 9, 2012.
52. *Generalized Killing spinors, geometric algebra and quantization: the quantum geometry of flux compactifications*, Quantum Field Theory and Hamiltonian Systems (QFTHS) conference, Craiova, Sep. 19-22, 2012.
53. *Geometric Algebra Techniques, Geometric Quantization and Flux Compactifications and Quantum Geometry: Between Strings, Categories and Topology*, IBS Center for Geometry and Physics, Postech, Pohang, Sep. 2012.
54. *General compactifications of M-theory on 8-manifolds with two Killing spinors*, String-Math Conference, Math Planck Institute, Bonn, Jul. 16-21, 2012.
55. *String Theory, D-branes, topological defects and higher categories*, Department of Theoretical Physics of IFIN-HH, Bucharest, Sep. 15, 2011.
56. *Framed Bicategories of Topological Defects*, Ludwig Maximilians University, Munich, Apr. 12, 2011.
57. *Strings, topology and n-categories: connections and implications*, Department of Theoretical Physics of IFIN-HH, Bucharest, Oct. 20, 2010.
58. *An introduction to modern category theory*, five invited lectures (minicourse) within the program “Higher Structures in Mathematics and Physics”, Erwin Schroedinger Institute, Univ. of Vienna, Sep. 13 – Oct. 1, 2010.
59. *Topological defects and framed bicategories*, invited talk within the Workshop on Derived Geometry organized by the Simons Center for Geometry and Physics, SUNY at Stony Brook, N.Y, Jan. 12 - 16, 2009.
60. *Topological defects and framed bicategories*, plenary talk within the Workshop on Derived Geometry held at the Simons Center for Geometry and Physics, SUNY at Stony Brook, N.Y. , Jan. 12-16, 2009.
61. *Topological defects and higher categories*, plenary talk within the conference “Higher Structures in Mathematics and Physics” organized by the Bernoulli Center, EPFL Lausanne, Nov. 3-7, 2008.
62. *Framed Bicategories of defects in topological Landau-Ginzburg Models*, plenary talk within the Workshop on Algebraic Structures in Geometry and Physics, Univ. of Leicester, U.K. , Jul. 21-25, 2008.
63. *Topological defect theories, bicategories and operads*, Univ. of Utrecht, May 30, 2008.
64. *Topological defects and bicategories*, plenary talk within the “Munich Workshop on String Field Theory and Related Aspects”, Arnold Sommerfeld Center for Theoretical Physics, Ludwig Maximilians University, Mar. 24-28, 2008.
65. *Generators, Koszul Duality and Brane Superpotentials*, plenary talk, “Workshop on Matrix Factorizations” Bernoulli Center, EPFL Lausanne, Sep. 10-14, 2007.
66. *Graded D-branes and skew-categories*, King's College, London, Sep. 2007.
67. *Open topological string theories*, invited extended lectures, Erwin Schroedinger Institute, Univ. of Vienna, Aug. 13-17, 2007.

68. *D-brane categories*, plenary talk within the anniversary symposium “ITP at 40”, C.N. Yang Institute, SUNY Stony Brook, N.Y., May 2-5, 2007.
69. *Tilting objects, Koszul duality and brane superpotentials*, Univ. of Edinburgh, Jan. 2007.
70. *Generating the superpotential on a D-brane category*, plenary talk within the RTN workshop on “Physics and Geometry of String Theory”, Ludwig Maximilians University, Munich, Jul. 24-29, 2006.
71. *D-brane superpotentials and noncommutative geometry, D-brane superpotentials and A-infinity categories*, two invited talks within the Oxford Mathematics Seminar and Oxford Physics seminar, Univ. of Oxford, Apr. 2006.
72. *D-branes and noncommutative geometry*, invited talk within the seminar series “String Theory in Greater Paris”, Ecole Polytechnique, Paris, Feb. 22, 2006.
73. *A-infinity and L-infinity algebras, categories and brane superpotentials*, plenary talk within the Mini-Workshop on Heterotic Strings, Derived Categories and Stacks, Mathematisches Forschungsinstitut Oberwolfach, Nov. 13-19, 2005.
74. *The noncommutative Geometry of Topological D-branes*, plenary talk within the “Conference on Constituents, Fundamental Forces and Symmetries of the Universe”, Corfu, Sep. 20-26, 2005.
75. *Topological D-branes and noncommutative geometry*, plenary talk within The Symposium on “Geometry, Conformal Field Theory and String Theory”, Durham University, U.K, Jul. 22 - Aug. 1, 2005.
76. *The boundary coupling of Landau-Ginzburg models*, Institute for Advanced Study, Princeton, N.J., Oct. 6, 2004
77. *Generalized WDVV equations for open-closed topological strings*, plenary talk within the “Noncommutative Geometry Workshop III: Quantum Geometry”, Mittag Leffler Institute, Stockholm, May 17-21, 2004.
78. *Operads, homotopy algebras and open string field theory*, CERN, Geneva, Sep. 2003.
79. *Konishi anomalies and matrix models*, plenary talk within the Simons Workshop, C. N. Yang Institute for Theoretical Physics, Stony Brook, N.Y., Aug. 11-Sep. 7, 2003.
80. *(Anti)symmetric matter, matrix models and superpotentials*, Univ. of California at Berkeley, Jun. 2003.
81. *Matrix models for (anti)symmetric matter*, Univ. of Illinois at Urbana-Champaign, Jun. 2003.
82. *M theory on toric G2 cones*, Institute for Theoretical Physics, Autonomous University of Madrid, Apr. 2003.
83. *Toric G2 cones*, plenary talk within the workshop “New Developments in Mirror Symmetry”, Leipzig, Mar. 26-29, 2003.
84. *Holomorphic matrix models*, C.N. Yang Institute, SUNY at Stony Brook, N.Y, Mar. 2003.
85. *Generalized analytic torsion and graded topological D-branes*, Univ. of Toronto, Jan. 2003.

86. *A-infinity categories, extended deformations and open string field theory, M-theory on toric G2 cones*, two invited seminars, CERN, Geneva, May 2002.
87. *M theory compactifications on cones of G2 holonomy*, within the program on “String Theory and Complex Geometry”, Physikzentrum Bad Honnef, Germany, Apr. 2002.
88. *M-theory compactification on cones on G2 holonomy*, within the joint seminar of Duke University - Univ. of Northern Carolina, Duke University, Apr. 2002.
89. *Chiral field theories from toric G2 cones, Extended deformations and graded topological D-branes*, two talks at Caltech-U.S.C. workshop on Geometric Transitions, Feb. 2002.
90. *Open string field theory and graded topological D-branes*, Institute of Advanced Study, Princeton, N.J , Feb. 2002.
91. *Topological D-branes and Enhanced triangulated categories*, Univ. of Washington at Seattle, Jan. 2002.
92. *Calabi-Yau D-brane composites and superpotentials*, Univ. of Toronto, Jan. 2002.
93. *Topological D-brane composites in Calabi-Yau compactifications*, New York University, Sep. 2001.
94. *Associative homotopy algebras and string field theory*, University of Texas at Austin, Apr. 2001.
95. *Homological mirror symmetry and string field theory*, Mathematics Department, SUNY at Stony Brook, N.Y., Sep. 2000.
96. *D-branes and arithmetic*, SUNY at Stony Brook, N.Y., Mar. 2000.
97. *D-branes and toric resolutions, Massless D-branes in Calabi-Yau compactifications, D-branes and boundary states, talks and minilectures* in the New York area Geometry and Physics Seminar, NYU/Columbia/Cornell, Oct. 1998, Feb 1999, Feb. 2000.