Personal information

Dr. Oleksandr Iena

name: Oleksandr
surname: Iena
sex: male

Curriculum Vitae

Work experience

since *September 2016*	self-employed in scientific, educational and cultural projects.
September 2011 – August 2016	researcher at the University of Luxembourg (assistant chercheur).
April 2010 – August 2011	researcher at SISSA, Trieste (senior PostDoc).
June 2009 – March 2010	staff scientist at the Johannes Gutenberg-Universität Mainz (wissenschaftlicher Mitarbeiter).

Education

May 2009	**Ph.D. (Dr. rer. nat.)** in Mathematics at the TU Kaiserslautern. thesis: *"Modification of Simpson moduli spaces of* 1*-dimensional sheaves by vector bundles, an experimental example"*, overall grade: *very good — magna cum laude*, advisor: Prof. Dr. Günther Trautmann.
August 2005	**Diplom-Mathematiker** degree at the Technische Universität Kaiserslautern, Specialization: algebraic geometry and computer algebra. Aggregate mark: *very good* (1.0). Subsidiary subject: *Physics.* Diploma thesis: *"Vector bundles on elliptic curves and factors of automorphy"*, advisor: Prof. Dr. Günther Trautmann.
June 2003	**Bachelor** degree in Mathematics with Honour at the National Taras Shevchenko University of Kyiv
June 1999	Kyiv Lyceum of Natural Sciences No.145 with Gold Medal

Teaching Experience[1]

2004 – 2016	Exercise classes for different majors, stand-in lectures, independent lecture courses, reading seminars, supervision of bachelor, master, PhD theses.

Organization of Seminars, Schools, Workshops and Conferences

October, 2012 – August, 2016	The Doctorands Seminar at the University of Luxembourg
December 10 – 12, 2012	Conference on the Occasion of Martin Schlichenmaier's 60th Birthday, Luxembourg
June 15 – 16, 2012	Seminar Sophus Lie, Luxembourg

[1]Some details about my teaching activities can be found at http://www.iena.info/teaching.html.

Presentations on Conferences, Workshops, Schools, etc.

2006 –2017 Presentations on different international scientific conferences, workshops, schools, etc.

Some presentations in the last years

January 9 – 13, 2017 *QUANTMOD – Quantization and Moduli Spaces*, University of Luxembourg
Talk: " *On vector bundles on curves and 1-dimensional sheaves*".

April 19, 2016 University of Cologne, Germany "*On* 1*-dimensional planar sheaves: when a limit of a line bundle is not a line bundle anymore*"

January 11 – 15, 2016 Workshop – *Higgs bundles and Hitchin system* – VBAC 2016, Centre Interfacultaire Bernoulli, Lausanne, Switzerland
Talk: "*On* 1*-dimensional sheaves on projective plane*"

September 14 – 18, 2015 Conference "Geometry and Quantization" GEOQUANT 2015, ESI, ICMAT, Campus de Cantoblanco, Madrid, Spain
Poster: "*A global description of the fine Simpson moduli space of* 1*-dimensional sheaves supported on plane quartics*"

Projects

September 1, 2014 – 2017 QUANTMOD – Quantization of Moduli Spaces FNR-OPEN: O13/MT/5707106, as leader of WP3[2] "Moduli spaces of bundles and sheaves with additional structure".

May 15, 2012 – May 14, 2015 GEOMQ11 (Internal research project at the University of Luxembourg): F1R-MTH-PUL-11GEOM, as contributing scientist.

2011 Geometria delle Varietà Algebriche e dei loro spazi dei moduli (PRIN), as contributor.

July-December 2004 Algebraic control theory project[3] of H. Doz. Dr. Eva Zerz and Viktor Levandovskyy. Writing the "control.lib" and "involut.lib" libraries for the computer algebra system `Singular`. (`Singular C` programming language)
Applications of algebraic methods for the solution of the problems from control theory.

Knowledge of languages

Mother tongues:

Ukrainian and **Russian**.

Foreign languages (CEFR)[4]:

	English	**German**	**Italian**	**French**	**Luxembourgish**
listening	C2	C2	B2	B2	C1
reading	C2	C2	B2	B2	C1
spoken interaction	C2	C2	B1	B1	–
spoken production	C2	C2	B1	B1	–
writing	C2	C2	B1	B1	–

[2]Work package 3.
[3] Supported by *Forschungsschwerpunkt "Mathematik und Praxis" des Landes Rheinland-Pfalz*
[4]The Common European Framework of Reference for Languages

EDP and programming languages

Singular C (constant usage), C/C++ (basic knowledge and experience, occasional usage), Visual Studio: Visual Basic and C# (basic knowledge and experience); R (basic knowledge and experience, occasional usage);
HTML, CSS, PHP, JavaScript, SQL (basic knowledge and experience, occasional usage);
LaTeX(WinEdt/Kile/TeXstudio+MiKTeX/TeX Live, constant usage), MS Office/ OpenOffice/ LibreOffice (in constant usage);
user experience both with MS Windows and OS from Linux family.

Memberships

- Luxembourg Mathematical Society
- D'Lëtzebuerger Vëlos-Initiativ

Reviewing

- Reviewer for zbMATH

List of publications

Journals

1. Oleksandr Iena, On the fine Simpson moduli spaces of 1-dimensional sheaves supported on plane quartics, Open Mathematics, 2018; 16(1): 46–62. [arXiv:1607.01319v2 [math.AG]]
2. Oleksandr Iena, Alain Leytem, *On the singular sheaves in the fine Simpson moduli spaces of* 1*-dimensional sheaves*, Canadian Mathematical Bulletin. 60 (2017), 522–535. [arXiv:1511.01847v2 [math.AG]]
3. Oleksandr Iena, *On the singular sheaves in the fine Simpson moduli spaces of* 1*-dimensional sheaves supported on plane quartics*, Rend. Istit. Mat. Univ. Trieste, Volume 48 (2016), 565–586. [arXiv:1305.2400v2 [math.AG]]
4. Oleksandr Iena, *Universal plane curve and moduli spaces of* 1*-dimensional coherent sheaves*, Communications in Algebra, Volume 43, Issue 2, 2015, pp. 812–828. [arXiv:1103.1485v3 [math.AG]]
5. Oleksandr Iena, *Vector bundles on elliptic curves and factors of automorphy*, Rend. Istit. Mat. Univ. Trieste, Volume 43 (2011), 61–94. [arXiv:1009.3230 [math.AG]]
6. O. G. Iena, *On the derivations of the polynomial ring in two variables in prime characteristic*, Bulletin of the University of Kiev (Series: Physics & Mathematics Sciences), 2007 (4), 23–27. (in Ukrainian)
7. Anatoliy P. Petravchuk and Oleksandr G. Iena, *On closed rational functions in several variables*, Algebra and Discrete mathematics, Number 2. (2007), pp. 115–124. [arXiv:math/0701588 [math.RA]]
8. Oleksandr G. Iena, *On eigenspaces of inner derivations in* $P_2(k)$, Bulletin of the University of Kiev (Series: Physics & Mathematics Sciences), 2006 (4), 11–17. (in Ukrainian)
9. A. P. Petravchuk, and O. G. Iena: *On centralizers of elements in the Lie algebra of the special Cremona group* $SA_2(k)$, Journal of Lie Theory, 16(2006), 561–567.

Computer algebra software

1. Oleksandr Iena, goettsche.lib: *a* Singular *library implementing some formulas for Betti numbers (by Drezét, Göttsche, Nakajima and Yoshioka, Macdonald)*, a library for Singular, Luxembourg, 2016–2018(V.0.931)
2. Oleksandr Iena, chern.lib: *Symbolic computations with Chern classes*, a library for Singular, Luxembourg, 2015–2018(V0.706)
3. Oleksandr Iena, lrcalc.lib: *a Singular interface to the Littlewood-Richardson Calculator by Anders Buch*, a library for Singular, Luxembourg, 2015
4. Oleksandr Iena, Markus Becker, Viktor Levandovskyy, involut.lib: *Computations and operations with involutions*, a library for Singular, Kaiserslautern, 2004
5. Oleksandr Iena, Markus Becker, Viktor Levandovskyy, control.lib: *Algebraic analysis tools for System and Control Theory*, a library for Singular, Kaiserslautern, 2004

Preprints

1. Oleksandr Iena, An observation on the Poincaré polynomials of moduli spaces of one-dimensional sheaves, arXiv:1805.02616, 2018.
2. Oleksandr Iena, *On different approaches to compute the Chern classes of a tensor product of two vector bundles*, http://hdl.handle.net/10993/27418, 2016
3. Oleksandr Iena, *On symbolic computations with Chern classes: remarks on the library* `chern.lib` *for* `Singular`, http://hdl.handle.net/10993/22395, 2015
4. Oleksandr Iena, Günther Trautmann, *Modification of the Simpson moduli space* $M_{3m+1}(\mathbb{P}_2)$ *by vector bundles (I)*, arXiv:1012.5843 [math.AG], 2010
5. O. G. Iena, A. P. Petravchuk, A. O. Regeta, *On the annihilators of rational functions in the Lie algebra of derivations of* $\Bbbk[x, y]$, arXiv:0910.4465 [math.RA], 2009

Lecture notes

- Oleksandr Iena, Riemann Surfaces. Lecture notes. University of Luxembourg, 2015; with a Ukrainian version

Popular mathematics

- Oleksandr Iena, *Lubricating a bicycle chain*, In the World of Mathematics, 2(24), 2018, 57–63 (in Ukrainian)

Theses

- Oleksandr Iena. *Modification of Simpson moduli spaces of* 1*-dimensional sheaves by vector bundles, an experimental example.* PhD thesis in Mathematics, Technische Universität Kaiserslautern, Germany, 2009.
- Oleksandr Iena. *Centralizers of derivations and closed rational functions in two variables.* Candidate of physical and mathematical sciences thesis in Mathematics in speciality 01.01.06 (algebra and number theory), National Taras Shevchenko University of Kyiv, Ukraine, 2008. (in Ukrainian)
- Oleksandr Iena. Vector bundles on elliptic curves and factors of automorphy. Diplomarbeit, Universität Kaiserslautern, Germany, August 2005.