CURRICULUM VITÆ

JACOPO STOPPA

1. GENERAL INFORMATION

· Born on 4 June 1981. Nationality: Italian.
· Webpage: `http://www-dimat.unipv.it/stoppa/`

2. CURRENT ACADEMIC POSITION

· **Professore Associato** di Geometria (Reader), Università di Pavia, since April 2014.
· **Principal Investigator** for the European Research Council - **ERC Starting Grant StG 307119** - StabAGDG "Stability and wall-crossing in algebraic and differential geometry". Starting date: 1 October 2012. Total duration: 48 months. Total funding: 511.936 euro. For more details see the webpage `http://www-dimat.unipv.it/stoppa/`.
· **Italian Habilitation 2012-13 (01/A2 Geometry and Algebra):** habilitation for full and associate professorships ("prima e seconda fascia"), `http://abilitazione.miur.it/public/pubblicarisultati.php`

3. OTHER CURRENT POSITIONS

· **Junior Research Fellow** on Undertaking, Trinity College, Cambridge (until June 2014).
· Membro aggregato - **Adjunct Member, FIRB Futuro in Ricerca Project** RBFR12DZRV "Spazi di moduli e applicazioni" (P.I.: Gilberto Bini, Milano Statale). Total duration: 60 months. Project webpage: `https://sites.google.com/site/binifirb2012/`.

4. PAST POSITIONS

· Ricercatore in Geometria (Lecturer), Dipartimento di Matematica, Università di Pavia (December 2010 - April 2014).
· Group Leader, Research Group "BPS States", Junior Hausdorff Research Trimester "Mathematical Physics", Hausdorff Institute for Mathematics, Bonn (September - December 2012). Associated research grant: 15.000 euro.
· Elected a Junior Research Fellow of Trinity College Cambridge on 6 October 2008.
· Member of the Department of Pure Mathematics and Mathematical Statistics (DPMMS), University of Cambridge, July 2009 - December 2010.
· Visiting Scientist, Max-Planck-Institut für Mathematik, Bonn, November 2008 - July 2009.

5. Research interests

- Complex algebraic and differential geometry: canonical metrics in Kähler geometry and algebro-geometric stability (MSC 2010: 53C25, 53C26).
- Donaldson-Thomas invariants and their wall-crossing: connections with differential geometry, integrable systems and mathematical physics (53C55, 51P05); connections with representation theory of quivers and plane tropical curves (14N35, 14T05, 16G20).

6. Publications and preprints

All the listed papers and preprints are available on the `arXiv` and, in their latest version, at `http://www-dimat.unipv.it/stoppa/` following the link *Research*, then *Research Papers*.

- Filippini, S. A., Garcia-Fernandez, M., Stoppa, J., *Stability data, irregular connections and tropical curves*, preprint 1403.7404v1.

  Abstract. We construct isomonodromic families of irregular meromorphic connections $\nabla(Z)$ on $\mathbb{P}^1$, with values in the derivations of a class of infinite dimensional Poisson algebras. Our main results concern the limits of the families $\nabla(Z)$ as we vary a scaling parameter R. In the $R \to 0$ conformal limit we recover a semi-classical version of the connections introduced by Bridgeland and Toledano Laredo (and so the Joyce holomorphic generating functions). In a different $R \to \infty$ large complex structure limit the $\nabla(Z)$ approach a very simple family of connections, while their flat sections display tropical behaviour, and also encode certain tropical/relative Gromov-Witten invariants. The connections $\nabla(Z)$ are a rough but rigorous approximation to the (mostly conjectural) four-dimensional tt^*-connections introduced by Gaiotto-Moore-Neitzke. A precise comparison with these is established in a basic example.

- Filippini, S. A., Stoppa, J., *TBA type equations and tropical curves*, preprint 1306.3852v1.

  Abstract. We revisit the wall-crossing behaviour of solutions to the Thermodynamic Bethe Ansatz type equations arising in a class of three-dimensional field theories, expressed as sums of "instanton corrections". We explain how to attach to an instanton correction at a critical value a set of (combinatorial types of) tropical curves in $\mathbb{R}^2$ of fixed degree, which determines its jump to leading order. We show that a weighted sum over all such curves is in fact a tropical count. This goes through to the q-deformed setting. Our construction can be regarded as a formal mirror symmetric statement in the framework proposed by Gaiotto, Moore and Neitzke.

- Filippini, S. A., Stoppa, J., *Block-Göttsche invariants from wall-crossing*, preprint 1212.4976v1.

  Abstract. We show how some of the refined tropical counts of Block and Göttsche emerge from the wall-crossing formalism. This leads naturally to a definition of a class of putative q-deformed Gromov-Witten invariants. We prove that this coincides with another natural q-deformation, provided by a result of Reineke and Weist in the context of quiver representations, when the latter is well defined.

- Stoppa, J., *A note on the definition of K-stability.* Preprint 1111.5826v1.
- Stoppa, J., *Joyce-Song wall-crossing as an asymptotic expansion.* Kyoto Journal of Mathematics **54**, no.1, 103-156 (2014).

  Abstract. We conjecture that the Joyce-Song wall-crossing formula for Donaldson-Thomas invariants arises naturally from an asymptotic expansion in the field theoretic work of Gaiotto, Moore and Neitzke. This would also give a new perspective on how the formulae of Joyce-Song and Kontsevich-Soibelman are related. We check the conjecture in many examples.

· Reineke, M., Stoppa, J., Weist, T., *MPS formula for quiver moduli and refined GW/Kronecker correspondence.* Geometry & Topology **16**, no. 4, 2097-2134 (2012).

Abstract. Motivated by string-theoretic arguments Manschot, Pioline and Sen discovered a new remarkable formula for the Poincaré polynomial of a smooth compact moduli space of stable quiver representations which effectively reduces to the abelian case (i.e. thin dimension vectors). We first prove a motivic generalization of this formula, valid for arbitrary quivers, dimension vectors and stabilities. In the case of complete bipartite quivers we use the refined GW/Kronecker correspondence between Euler characteristics of quiver moduli and Gromov-Witten invariants to identify the MPS formula for Euler characteristics with a standard degeneration formula in Gromov-Witten theory. Finally we combine the MPS formula with localization techniques, obtaining a new formula for quiver Euler characteristics as a sum over trees, and constructing many examples of explicit correspondences between quiver representations and tropical curves.

· Stoppa, J., *D0-D6 states counting and GW invariants.* Letters in Mathematical Physics **102**, no. 2, 149-180 (2012).

Abstract. We describe a correspondence between the Donaldson-Thomas invariants enumerating D0-D6 bound states on a Calabi-Yau 3-fold and certain Gromov-Witten invariants counting rational curves in a family of blowups of weighted projective planes. This is a variation on a correspondence found by Gross-Pandharipande, with D0-D6 bound states replacing representations of generalized Kronecker quivers. We build on a small part of the theories developed by Joyce-Song and Kontsevich-Soibelman for wall-crossing formulae and by Gross-Pandharipande-Siebert for factorisations in the tropical vertex group. Along the way we write down an explicit formula for the BPS states counts which arise up to rank 3 and prove their integrality. We also compare with previous "noncommutative DT invariants" computations in the physics literature.

· Stoppa, J., *Universal covers and the GW/Kronecker correspondence.* Communications in Number Theory and Physics **5**, no. 2, 1-43 (2011).

Abstract. The tropical vertex is an incarnation of mirror symmetry found by Gross, Pandharipande and Siebert. It can be applied to m-Kronecker quivers $K(m)$ (together with a result of Reineke) to compute the Euler characteristics of the moduli spaces of their (framed) representations in terms of Gromov-Witten invariants (as shown by Gross and Pandharipande). In this paper we study a possible geometric picture behind this correspondence, in particular constructing rational tropical curves from subquivers of the universal covering quiver $\widetilde{K}(m)$. Additional motivation comes from the physical interpretation of m-Kronecker quivers in the context of quiver quantum mechanics (especially work of F. Denef).

· Stoppa, J., Székelyhidi, G., *Relative K-stability of extremal metrics.* Journal of the European Mathematical Society **13**, no. 4, 899-909 (2011).

Abstract. We show that if a polarised manifold admits an extremal metric then it is K-polystable relative to a maximal torus of automorphisms.

· Stoppa, J., Thomas, R. P., *Hilbert schemes and stable pairs: GIT and derived category wall crossings.* Bulletin de la Société Mathématique de France **139**, no. 3, 297-339 (2011).

Abstract. We show that the Hilbert scheme of curves and Le Potier's moduli space of stable pairs with one dimensional support have a common GIT construction. The two spaces correspond to chambers on either side of a wall in the space of GIT linearisations. We explain why this is not enough to prove the DT/PT wall crossing conjecture relating the invariants derived from these moduli spaces when the underlying variety is a 3-fold. We then give a gentle introduction to a small part of Joyce's theory for such wall crossings, and use it to give a short proof of an identity relating the Euler characteristics of

these moduli spaces. When the 3-fold is Calabi-Yau the identity is the Euler-characteristic analogue of the DT/PT wall crossing conjecture, but for general 3-folds it is something different, as we discuss.

· Stoppa, J., Tenni, E., *A simple limit for slope instability.* International Mathematics Research Notices 2010:1816-1830 (2010).

Abstract. Ross and Thomas have shown that subschemes can K-destabilize polarized varieties, yielding a notion known as slope (in)stability for varieties. Here, we describe a special situation in which slope instability for varieties (for example of general type) corresponds to a slope instability type condition for certain bundles, making the computations almost trivial. We illustrate this with a construction of new unstable classes on blowups of ruled surfaces.

· Stoppa, J., *Unstable blowups.* Journal of Algebraic Geometry **19**, 1-17 (2010).

Abstract. Let (X, L) be a polarised manifold. We show that K-stability and asymptotic Chow stability of the blowup of X along a 0-dimensional cycle are closely related to Chow stability of the cycle itself, for polarisations making the exceptional divisors small. This can be used to give (almost) a converse to the results of Arezzo and Pacard (2004 and 2007) and to give new examples of Kähler classes with no constant scalar curvature representatives.

· Stoppa, J., *Twisted constant scalar curvature Kähler metrics and Kähler slope stability.* Journal of Differential Geometry **83**, no. 3, 663–691 (2009).

Abstract. On a compact Kähler manifold we introduce a cohomological obstruction to the solvability of the constant scalar curvature (cscK) equation twisted by a semipositive form, appearing in works of Fine and Song-Tian. As a special case we find an obstruction for a manifold to be the base of a holomorphic submersion carrying a cscK metric in certain adiabatic classes. We apply this to find new examples of general type threefolds with classes which do not admit a cscK representative. When the twist vanishes our obstruction extends the slope stability of Ross-Thomas to effective divisors on a Kähler manifold. Thus we find examples of non-projective slope unstable manifolds.

· Stoppa, J., *K-stability of constant scalar curvature Kähler manifolds.* Advances in Mathematics **221**, no. 4, 1397–1408 (2009).

Abstract. We show that a polarised manifold with a constant scalar curvature Kähler metric and discrete automorphisms is K-stable. This refines the K-semistability proved by S.K. Donaldson.

Other texts/in preparation:

· Stoppa, J., *Some applications of K-stability and K-energy*, PhD thesis, Pavia (2009). Summary: Scientifica Acta **2**, no. 2, 101-104 (2008).

Abstract. In this thesis we apply the notion of K-stability introduced by S. K. Donaldson and the K-energy functional introduced by T. Mabuchi to study Kähler metrics of constant scalar curvature on smooth complex projective varieties and more generally Kähler manifolds. Our methods are taken both from algebraic and differential geometry. A general formula for the behaviour of K-stability under blowing up is proved. The theorem of Arezzo-Pacard on blowing up constant scalar curvature Kähler metrics is restated in algebro-geometric terms, and a converse is given. One of the main results in the field is a theorem of Donaldson stating that a smooth complex projective variety with a constant scalar curvature Kähler metric must be K-semistable. Under the assumption that the group of projective automorphisms is discrete we strengthen this conclusion to prove K-stability (as predicted by Donaldson). One of the first applications of K-semistability was a beautiful slope inequality for subschemes due to Ross-Thomas. Here we show how, at least for divisors, the slope inequality can be recovered in a completely different way via the K-energy, thus making it applicable to more general Kähler, non-projective manifolds. Many new and concrete examples are scattered throughout the text.

- Stoppa, J., *Notes on the extremal field of odd symplectic Grassmannians*, `http://www-dimat.unipv.it/stoppa/`.

Abstract. The purpose of these notes is to compute the Futaki character for the family of odd symplectic Grassmannians, ie. Grassmannians of "Lagrangian" 2-planes in a complex vector space of dimension $2n + 1$ endowed with a skew 2-form of maximal rank. This is part of an old, ongoing project to study the algebro-geometric stability of these manifolds, as well as the existence of special metrics on them.

7. ACADEMIC VISITS AND SHORT-TERM POSITIONS

- Visiting position, Hausdorff Center for Mathematics, Bonn, July 2011, invited by D. Huybrechts.
- Member of the Research Program "Moduli Spaces", Isaac Newton Institute for Mathematical Sciences, January-June 2011.
- Visiting position, RIMS Kyoto, March 2010, invited by H. Nakajima.
- Visiting position, BICMR, Beijing, October 2008, invited by G. Tian.
- Academic visits, Imperial College, London, in the periods May-June 2006, October 2006-March 2008 and June-October 2008, working with S. K. Donaldson and R. P. Thomas.

8. ORGANISATION OF SEMINARS, CONFERENCES, THEMATIC PERIODS

- Organizer of ERC - FIRB workshop "Mirror Symmetry, enumerative geometry and related topics", Collegio Borromeo, Pavia, May 2014.
- Organizer of the ERC Research Meeting "New directions in Donaldson-Thomas theory, BPS states and related topics", Pavia, June 2013.
- Organizer of Richard Thomas' invited lectures "Counting curves in algebraic varieties", Pavia, March 2013.
- Group Leader and organiser of the Junior Research Trimester "Mathematical Physics", Group D "BPS states" (8 members), Hausdorff Institute for Mathematics, Bonn, September-December 2012.
- Organiser (with S. Meinhardt and N. Carqueville),Workshop on Algebra, geometry and Physics of BPS states, HIM Bonn, 12-14 November 2012.
- Organiser (with T. Bridgeland and R. P. Thomas), Workshop on Derived Categories, Cambridge, 11-15 April 2011.
- Organizer (with A. S. Kaloghiros), Geometry Postdoc Seminar, DPMMS Cambridge, September-December 2010.
- Organiser (with D. Huybrechts), SFB/TR 45 Seminar Bonn-Essen-Mainz "Motivic Donaldson-Thomas invariants", May-July 2009.
- Organiser (with F. Nironi), "Seminar on Behrend functions", Max-Planck-Institut für Mathematik, Bonn, April-May 2009.

9. INVITED TALKS AT INTERNATIONAL CONFERENCES

- Invited talk, "Workshop on the geometry and physics of moduli spaces", Miraflores de la Sierra, Madrid, 16 - 20 June 2014.
- Invited talk, "Geometry at Bicocca II" Conference, Milan, 13-14 February 2014.
- Invited talk, FNRS Meeting "Differential Geometry", Brussels, 2-3 September 2013.

· Invited talk, 9th ISAAC Conference, Krakow, 5-9 August 2013 (session 22, "Analytic methods in complex geometry").
· "A degeneration formula for quiver moduli and its Gromov-Witten equivalent", Vector Bundles on Algebraic Curves (VBAC) Conference 2012, CRM Barcelona, 18-22 June 2012.
· Invited talk, Conference on Mirror Symmetry and Tropical Geometry, Cetraro, July 2011.
· Invited talk, Pacific Rim Conference on Symplectic Geometry, Nagoya, July 2010.
· "D0-D6 states counting and Gromov-Witten invariants", Conference on Wall-Crossings in Mathematics and Physics, Urbana-Champaign, May 2010.
· "A simple limit for slope instability", International Conference on Kahler and related geometries, Laboratoire de Mathematiques Jean Leray, Nantes, October 2009.
· "Twisted cscK metrics and Kähler slope stability", Perspectives in Geometric Analysis, International Centre for Mathematical Research, Beijing, 27-31 October 2008.
· "K-stability of constant scalar curvature Kähler manifolds", ICTP Conference on Differential Geometry, Trieste, 16-20 June 2008.
· "K-stability of constant scalar curvature Kähler manifolds", GAeL Conference, Madrid, 20-26 April 2008.
· "K-stability of constant scalar curvature Kähler manifolds", Intensive period on Extremal Kähler metrics and the Kähler-Ricci flow, CRM, Pisa, March 2008.
· "Energy functionals and algebraic geometry", GAeL Conference, Istanbul, 18-22 June 2007.

10. Invited mini-courses

· "K-stability of projective varieties" (5 hours), University of Coimbra, April 2014.
· "Hyperkähler metrics and wall-crossing" (4 lectures), Hausdorff Center, Bonn, July 2011.
· "Recent results in Donaldson-Thomas theory" (3 lectures), RIMS Kyoto, March 2010.
· "Algebro-geometric stability and special metrics" (3 lectures), BICMR, Beijing, October 2008.

11. Invited seminars and colloquia

· "Stability data, irregular connections and tropical curves", Algebraic Geometry Seminar, DPMMS Cambridge, May 2014.
· Invited talk, FIRB Research Meeting, Trento, February 2014.
· Invited talk, Erwin Schrödinger Institute for Mathematical Physics, Vienna, 27 September 2013.
· "Refined curve counting, quivers, and wall-crossing I & II", Geometry Seminar, EPFL Lausanne, March 2013.
· "Tropical vertex group and applications I & II", Bologna, February 2013.
· "Extremal metrics and filtrations", IST Differential Geometry Seminar, Lisbon, February 2013.

· "Refined curve counting, quivers, and wall-crossing" , Geometry in Lisbon Seminar, IST, Lisbon, February 2013.
· "Some applications of the tropical vertex group", SISSA-ISAS, Trieste, December 2012.
· "Two wall-crossing formulae from asymptotic expansions in hyperkähler geometry", Oberseminar Differentialgeometrie, Leibniz Universität Hannover, November 2012.
· "Some geometry of wall-crossing formulae", Hausdorff Institute for Mathematics, Bonn, October 2012.
· "Some applications of the tropical vertex group", Max-Planck-Institut für Mathematik, Bonn, October 2012.
· "Una formula di degenerazione per quiver e l'equivalente in teoria di Gromov-Witten", Seminari di Geometria, Politecnico di Milano, April 2012.
· "Metriche Ricci-piatte e invarianti di Donaldson-Thomas", Giornate di Geometria III, Pavia, March 2012.
· "Jyoce-Song wall-crossing as an asymptotic expansion", Homological Mirror Symmetry Research Seminar, Oxford, March 2012.
· "A degeneration formula for quiver moduli and its Gromov-Witten equivalent", Algebraic Geometry and Moduli Seminar, ETH Zurich, March 2012.
· "Universal covers and the GW/Kronecker correspondence", Mathematics Department, Wüppertal University, June 2011.
· Invited talk, Mathematics Department, University of Edimburgh, April 2011.
· Colloquium, ZMP Hamburg, October 2010.
· "Hyperkahler metrics and wall-crossing", Columbia University, New York, May 2010.
· "On the work of Gaiotto, Moore and Nietzke", Imperial College, London, April 2010.
· "D0-D6 states counting and GW invariants", Tokyo (IPMU), March 2010.
· "Relative K-stability of extremal metrics", Differential Geometry Seminar, RIMS Kyoto, March 2010.
· "D0-D6 states counting and GW invariants", Algebraic Geometry Seminar, RIMS Kyoto, March 2010.
· "Una corrispondenza D0-D6/GW", Dipartimento di Matematica "F. Enriques", Milano, December 2009.
· "The topological DT/PT wall-crossing formula" I & II, Max-Planck-Institut fur Mathematik, Bonn, April 2009.
· Invited talk, Max-Planck-Institut fur Mathematik, Bonn, June 2008.
· Invited talk, Giornate di Geometria Algebrica e argomenti correlati IX, Levico Terme, 27-31 May 2008.
· "Twisted cscK metrics and Kahler slope stability", Departamento de Matematicas, Consejo Superior de Investigaciones Científicas, Madrid, April 2008.
· "Unstable blowups", Cambridge Geometry Seminar, Cambridge, May 2007.
· "K-stabilità e scoppiamenti", Giornate di Geometria I, Pavia, February 2007.

12. Teaching (non-Italian Institutions)

· Supervisor, Riemann Surfaces (Prof. P. M. H. Wilson), Michaelmas Term 2010, DPMMS Cambridge. Supervising 5-6 groups of Trinity students.
· Supervisor, Geometry IB (Prof. B. Totaro), Lent Term 2010, DPMMS Cambridge. Supervising 5-6 groups of Trinity students.
· Supervisor, Riemann Surfaces (Prof. P. M. H. Wilson), Michaelmas Term 2009, DPMMS Cambridge. Supervising 3-4 groups of Trinity students.

13. Teaching (Italian Istitutions)

· Graduate course on Kähler geometry (Pavia, Spring semester 2014, 24 hours).
· Lecturer, Geometry for Architecture, Pavia, 2013-14. A one-semester course (80 hours) for a class of $\sim$ 50 students.
· Lecturer, Geometry II, Pavia, 2012-2013 (joint; $\sim$ 30 hours of a one-semester course (90 hours) for $\sim$ 40 students.).
· Lecturer, Analysis II for Engineering, Pavia, 2012-13 (joint; $\sim$ 30 hours of a one-semester course (90 hours) for $\sim$ 180 students.
· Lecturer, Complements of Analysis for Engineering, Pavia, 2012-2013 (joint; $\sim$ 30 hours of a one-semester course (90 hours) for $\sim$ 150 students.
· Additional lecturer for the graduate course "Geometric quantization" (Prof. R. Paoletti), Milano Bicocca, 2012.
· Lecturer, Linear Algebra for Engeneering, Pavia, 2011-12. A one-semester course (60 hours) for a class of $\sim$ 180 students.
· Assistant lecturer, Geometry I for Mathematics students (Prof. M. P. Bernardi), Università di Pavia, 2004-05.
· Supervisor, Geometry I for Mathematics students (Prof. M. P. Bernardi), Università di Pavia, 2003-04.
· Assistant lecturer, Calculus for Mathematics students (Prof. G. Gilardi), Università di Pavia, 2002-03.
· Supervisor, Mathematics for Pharmacy (Prof. A. Torre), Università di Pavia, 2002-03, 2003-04, 2004-05.

14. Supervision of PhD students and postdocs

· Postdoc: S. A. Filippini (Pavia, December 2012 to July 2013; two papers coauthored). Sara is currently a Postdoctoral Fellow at the Fields Institute, Toronto; from February 2014 she will take up a postdoctoral position at the University of Zürich.
· Postdoc (funded by ERC): A. Mandini (Pavia, from 1 September 2013). Alessia was previously a Postdoctoral Fellow at IST, Lisbon.
· PhD student (funded by ERC): Anna Barbieri (starting in November 2013).
· At least 1 more postdoc will be part of the research team for the project ERC StG 307119.

15. Administrative tasks

· Member of the PhD Committee at Pavia.
· Supervisor of the Mathematics lectures schedule, Pavia (joint appointment), 2013-14.

16. Past studies

- Dottore di ricerca in Matematica (Phd), 16 January 2009, Università degli Studi di Pavia. Thesis: "Some applications of K-stability and K-energy". Supervisor: Prof. Richard P. W. Thomas, Imperial College, London.
- Diploma di Licenza, 3 July 2006, Scuola Universitaria Superiore - IUSS Pavia http://www.iusspavia.it.
- Laurea Specialistica in Matematica, 22 September 2005, Università degli Studi di Pavia, final mark 110/110 cum laude. Dissertation: "Invarianti di Futaki di sezioni iperpiane di Grassmanniane" (Italian). Supervisors: Prof. Gian Pietro Pirola, Università di Pavia; Dr Alessandro Ghigi, Università di Milano Bicocca.
- Laurea Triennale in Matematica, 16 October 2003, Università degli Studi di Pavia, final mark 110/110 cum laude. Dissertation: "Fibrati vettoriali e varietà di Grassmann" (Italian). Supervisor: Dr Paola Frediani, Università di Pavia.

17. Study grants and awards

- EPSRC Grant to visit Prof. S. K. Donaldson, Imperial College, London, June-October 2008.
- Phd Grant, Dottorato di Ricerca in Matematica e Statistica, Università degli Studi di Pavia, XXI ciclo.
- "Cinquini-Cibrario" Award for the best thesis in Pure Mathematics, Università degli Studi di Pavia, 2006-07.
- IUSS Award for members of the Scuola Universitaria Superiore, Pavia, 2001-02, 2002-03, 2003-04, 2004-05.
- INdAM Grant for Maths undergraduates, 2001-02, 2002-03.
- A finalist in the XVIth Italian Mathematics Olympiad, May 2000.

18. Pro Bono

- Referee for Adv. in Mathematics, Comm. Number Theory and Physics, IMRN, Math. Annalen, Pacific J. of Math., J. of Algebraic Combinatorics, J. Diff. Geometry, J. Symp. Geometry.
- Reviewer for Mathematical Reviews.

19. Outreach

- Outreach activity with HIM, Bonn, December 2012. Podcast available at http://www.him.uni-bonn.de/en/about-him/podcast/.
- Collaboration with the Italian "Piano Lauree Scientifiche" outreach program for secondary school students, Pavia node,
http://www-dimat.unipv.it/vitali/segue
Public lecture: "From Geometry to Physics: the notion of curvature", June 2013, http://www-dimat.unipv.it/stagescuole/2013

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