

Curriculum vitae of Alberto Della Vedova*

May 16, 2018

Personal data

First Name: Alberto

Last Name: Della Vedova

Date of birth: October 24th, 1978

Place of birth: Cuggiono (MI) - Italy

Citizenship: Italian

Working address:

Università degli Studi di Milano Bicocca
Dipartimento di Matematica pura e applicata
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Employment

2017 – 2020 Assistant professor (RTD-B) in Mathematics at University of Milano-Bicocca (Italy)

2016 – 2017 Assistant professor (RTD-A) in Mathematics at University of Milano-Bicocca (Italy)

2014 – 2016 Post-doc researcher in Mathematics at University of Milano-Bicocca (Italy)

2010 – 2013 Post-doc researcher in Mathematics at University of Parma (Italy)

2010 – 2012 Visiting Postdoctoral Research Associate at Princeton University (USA)

2005 – 2009 Post-doc researcher in Mathematics at University of Parma (Italy)

Education

2002 – 2005

Ph.D. in Mathematics at University of Milano-Bicocca (Italy)

Title of the Thesis: “Asymptotic growth of equivariant sections for linearized actions on complex projective manifolds”

Advisor: prof. R. Paoletti

*Le dichiarazioni rese nel presente curriculum sono da ritenersi rilasciate ai sensi degli artt. 46 e 47 del D.P.R. 445/2000.

1997 – 2002

Laurea (Degree) in Mathematics at University of Milano (Italy)

Title of the Thesis: “Ottonioni, Gruppi eccezionali e Varietà di Severi”

Advisor: prof. P. Cotta-Ramusino

Final grade: 110/110 cum laude

Grants

2017 Research grant FFABR from MIUR (Italian Ministry of Education, Universities and Research)

2014 – 2017 Research grant (ex art. 22, L. 240/2010) from University of Milano-Bicocca

2010 – 2013 Marie Curie FP7-PEOPLE-2009-IOF from European Union - Grant number 255579

2005 – 2009 Research grant (ex art. 51, c. 6, L. 449/1997) from University of Parma

2002 – 2005 Ph.D. grant from University of Milano-Bicocca

Projects

FIRB 2012 “Geometria Differenziale e Teoria Geometrica delle Funzioni”. Member of Parma unit.

PRIN 2010–2011 “Varietà reali e complesse: geometria, topologia e analisi armonica”. Member of Parma unit.

PRIN 2007 “Proprietà geometriche delle varietà reali e compless”. Member of Parma unit.

Organization

May 2018 Workshop “Geometria in Bicocca 2018”. Università di Milano Bicocca (Italy).

February 2016 Workshop “Geometria in Bicocca 2016”. Università di Milano Bicocca (Italy).

February 2015 Workshop “Geometria in Bicocca 2015”. Università di Milano Bicocca (Italy).

Schools, conferences and workshops

January 2018: “*Informal Geometry Workshop in 'Paradiso'*”. Cogne (Aosta).

April 2017: “*School - Flows and Limits in Kähler Geometry*”. Nantes (FR).

October 2016: “*Kähler-Einstein families*”. Centro De Giorgi. Pisa.

September 2015: “*XX Congresso. Unione Matematica Italiana*”. Siena.

January 2015: “*A Geometry day in Como 2015*”. University of Insubria, Como.

October 2014: “*Progressi Recenti in Geometria Reale e Complessa - IX*”. CIRM, Levico Terme (Trento).

June 2014: “*Asymptotic aspects of complex and algebraic geometry*”. University of Milano-Bicocca, Milano.

June 2013: “*Complex Analysis and Geometry - XXI*”. CIRM, Levico Terme (Trento).

- December 2012:** *“Recent Developments in Kaehler Geometry”*. Institut Henri Poincaré, Paris (FR).
- November 2012:** *“Workshop MACK5”*. École Française de Rome.
- October 2012:** *“The 18th International Symposium on Complex Geometry (Sugadaira symposium)”*. Sugadaira (JP).
- October 2012:** *“Progressi Recenti in Geometria Reale e Complessa”*. CIRM, Levico Terme (Trento).
- June 2012:** *“School and conference on Geometric Analysis”*. ICTP (Trieste).
- September 2012:** *“Complex Algebraic Geometry”*. MFO, Oberwolfach (DE).
- June 2011:** *“Complex Analysis and Geometry - XX”*. CIRM, Levico Terme (Trento).
- March 2011:** *“Simons Workshop on Kähler Geometry”*. Simons Center for Geometry and Physics, Stony Brook (USA).
- February 2011:** *“Extremal metrics: evolution equations and stability”*. CIRM, Marseille (FR).
- June 2010:** *“Complex Geometry”*. CIRM, Levico Terme (Trento).
- May 2010:** *“Geometria in Bicocca”*. University of Milano-Bicocca, Milano.
- November 2009:** *“Conference on Kaehler and related geometries”*. Laboratoire Jean Leray, Nantes (FR).
- July 2009:** *“Extremal Kähler metrics”*. BIRS, Banff (CDN).
- June 2009:** *“Kähler and Sasakian Geometry in Rome”*. Università la Sapienza e Università Roma tre, Roma.
- June 2009:** *“Complex Analysis and Geometry - XIX”*. CIRM, Levico Terme (Trento).
- January 2009:** *“Recenti Sviluppi in Geometria Complessa e Simplettica”*. Centro di Ricerca Matematica Ennio De Giorgi, Pisa.
- October 2008:** *“Progressi Recenti in Geometria Reale e Complessa”*. CIRM, Levico Terme (Trento).
- June 2008:** *“School and Conference on Differential Geometry”*. ICTP, Trieste.
- May 2008:** *“Recent Advances in Geometry and Topology of Submanifolds”*. Università la Sapienza, Roma.
- March 2008:** *“Extremal Kaehler Metrics and Kaehler-Ricci Flow”*. Centro di Ricerca Matematica Ennio De Giorgi, Pisa.
- June 2007:** *“Algebraic Geometry in Higher Dimensions”*. CIRM, Levico Terme (Trento).
- May 2007:** *“Complex Analysis and Geometry - XVIII”*. CIRM, Levico Terme (Trento).
- September 2006:** *“Topologia delle varietà algebriche complesse”*. Alghero.
- May 2006:** *“Giornate di Geometria Algebrica ed argomenti correlati VIII”*. Scuola Internazionale Superiore di Studi Avanzati, Trieste.
- March 2006:** *“Recenti sviluppi della geometria complessa, differenziale, simplettica”*. Centro di Ricerca Matematica Ennio De Giorgi, Pisa.
- July 2005:** *“AMS Summer Research Institute in Algebraic Geometry”*. University of Washington, Seattle, WA (USA).

June 2004: MRI Spring School 2004, “*Lie groups in Analysis, Geometry and Mechanics*”. Università di Utrecht (NL).

April 2004: “*Algebraic curves, monodromy and related topics*”. Politecnico di Milano.

Research visits

November 2012: Ten-days stay at ICTP (Trieste) at the invitation of prof. C. Arezzo.

February-May 2012: Four-months stay at BICMR (Beijing, CN) at the invitation of prof. G. Tian.

February 2012: One-week stay at SCGP (Stony Brook, NY) at the invitation of prof. C. Teleman.

January 2012: One-week stay at ICTP (Trieste) at the invitation of prof. C. Arezzo.

January 2011: One-week stay at ICTP (Trieste) at the invitation of prof. C. Arezzo.

November-December 2009: Four-weeks stay at Mathematics department of Yeshiva University of New York, NY (USA) at the invitation of prof. G. La Nave.

February 2009: one-week stay at Johns Hopkins University of Baltimore, MD (USA) at the invitation of Ph.D. Y. A. Rubinstein.

October-December 2008: “*Junior Trimester Program on Analysis (and workshop on Geometric Analysis)*”. Hausdorff Research Institute for Mathematics, Bonn.

October-December 2007: Three-months stay at Mathematics department of Princeton University, NJ (USA) at the invitation of prof. G. Tian.

April 2007: Three-weeks stay at Mathematics department of Princeton University, NJ (USA) at the invitation of prof. G. Tian.

Invited talks

22/1/2018 “Special almost complex structures on symplectic manifolds”. Informal Geometry Workshop in ‘Paradiso’. (Cogne, Italy).

14/7/2017 “Strutture quasi complesse speciali su varietà simplettiche”. Università di Firenze (Italy).

8/9/2015 “Sul problema di prescrizione della curvatura scalare Hermitiana su varietà simplettiche”. XX Congresso U.M.I. (Siena, Italy).

3/6/2015 “On the curvature of symplectic manifolds”. Università di Milano Bicocca (Italy).

25/3/2015 “On prescribing Hermitian curvature on symplectic manifolds”. Università di Parma (Italy).

22/10/2014 “On the curvature of conic Kähler-Einstein metrics”. Progressi Recenti in Geometria Reale e Complessa IX. CIRM, Levico Terme (Trento, Italy).

4/6/2013 “Geometric flows and Kaehler reduction”. Complex Analysis and Geometry - XXI. CIRM, Levico Terme (Trento, Italy).

14/3/2013 “Metriche estremali su varietà Kaehleriane”. Università di Parma (Italy).

9/11/2012 “On the uniqueness of extremal Kaehler metrics”. Workshop MACK5. École Française de Rome (Italy).

- 25/10/2012** “On the uniqueness of extremal Kaehler metrics”. The 18th International Symposium on Complex Geometry (Sugadaira symposium). Sugadaira (Japan).
- 16/10/2012** “On the uniqueness of extremal Kaehler metrics”. Progressi Recenti in Geometria Reale e Complessa VIII. CIRM, Levico Terme (Trento, Italy).
- 29/6/2012** “On the uniqueness of extremal Kaehler metrics”. School and conference on Geometric Analysis. ICTP Trieste (Italy).
- 11/5/2012** “On blowing up extremal Kaehler manifolds”. BICMR, Peking (CN).
- 22/2/2012** “Geometry of moment map”. BICMR, Peking (CN).
- 7/2/2012** “Scalar curvature and asymptotic Chow stability of projective bundles and blowups”. Program: “Algebraic Topology and Physics”. SCGP, Stony Brook, NY (USA).
- 19/1/2012** “On the uniqueness of extremal Kaehler metrics”. ICTP, Trieste (Italy).
- 8/12/2011** “Geometry of moment map”. Geometry working seminar. Princeton University, NJ (USA).
- 14/6/2011** “Scalar curvature and asymptotic stability of projective bundles and blow-ups”. Complex Analysis and Geometry - XX. CIRM, Levico Terme (Trento, Italy).
- 11/2/2011** “Scalar curvature and asymptotic Chow stability of projective bundles and blow-ups”. Extremal metrics: evolution equations and stability. CIRM, Marseille (France).
- 19/10/2010** “Quantisation and the Hessian of Mabuchi Energy”. Geometry working seminar. Princeton University, NJ (USA).
- 26/5/2010** “On the asymptotic Chow stability of some constant scalar curvature polarized manifolds”. Università di Parma (Italy).
- 7/5/2010** “On the asymptotic Chow stability of some constant scalar curvature polarized manifolds”. Geometria in Bicocca. Università di Milano Bicocca (Italy).
- 3/12/2009** “K-stability and singularities”. Yeshiva University, NY (USA).
- 1/7/2009** “K-stability and singularities”. Extremal Kaehler metrics. BIRS, Banff (Canada).
- 25/2/2009** “Examples of Fano 3-folds”. Kaehler geometry through examples seminar. Johns Hopkins University, Baltimore, MD (USA).
- 24/2/2009** “Geometric obstructions to the existence of extremal Kaehler metrics on blow-ups”. Johns Hopkins University, Baltimore, MD (USA).
- 26/11/2008** “CM-stability of blow-ups and canonical metrics”. Trimester seminar within the Junior Trimester Program on Analysis (and workshop on Geometric Analysis). Hausdorff Research Institute for Mathematics, Bonn (Germany).
- 23/10/2008** “Stabilità CM di varietà scoppiate e metriche canoniche”. Progressi Recenti in Geometria Reale e Complessa. CIRM, Levico Terme (Trento, Italy).
- 6/2/2007** “Metriche estremali su scoppiamenti: un risultato di non-esistenza”. Università di Milano Bicocca (Italy).
- 27/5/2006** “Mappe momento e volumi equivarianti”. Giornate di Geometria Algebrica ed argomenti correlati VIII. SISSA, Trieste (Italy).

Services

Peer-reviewer for mathematical journals including Annals of Mathematics, Journal of Differential Equations, Proceedings of the Edinburgh Mathematical Society, Rivista Matematica dell'Università di Parma, and Transactions of the American Mathematical Society.

Teaching experience

Spring 2018: PhD course on 'Kähler-Einstein metrics' within Bicocca-Pavia-INdAM PhD program (Italy).

Fall 2015-2017: One-semester course in Differential Geometry at University of Milano Bicocca (Italy).

Fall 2015-2017: Recitations in Linear Algebra at University of Milano Bicocca (Italy).

Spring 2015: One-semester course in Complex Geometry at University of Milano Bicocca (Italy).

Spring 2013: One-semester course in Algebraic Geometry at University of Parma (Italy).

Fall 2011: Short course in Riemannian Geometry at Kigali Institute of Science and Technology (Rwanda)
- Within a school on "Introduction to Riemannian Geometry" organized by ICTP (Trieste) and ISP (Sweden).

Spring 2009: Recitations in Classical Geometry at University of Parma (Italy).

Fall 2006, Spring 2008: One-semester course in Foundations of Calculus at University of Parma (Italy).

Fall 2005: Recitations in Algebraic Geometry at University of Pavia (Italy).

Fall 2004-2005: Recitations in Foundation of Mathematics at University of Milano Bicocca (Italy).

Fall 2003: Recitations in Calculus II at University of Milano Bicocca (Italy).

Spring 2003-2005: Recitations in Mathematics for Social Science at University of Milano Bicocca (Italy).

Thesis supervised

PhD

2017- Alice Gatti (in preparation).

Bachelor degree

March 2018: Daniele Dell'Oro, "Il teorema di invarianza di dominio".

March 2018: Marco Pievani, "La formula di Eulero".

February 2018: Andrea Mariani, "Sfere esotiche di Milnor".

November 2017: Maurizio Grimoldi, "Il teorema di classificazione delle superfici compatte".

November 2017: Paolo Piantedosi, "Forme differenziali e teorema di Gauss-Bonnet".

September 2017: Marco Ronchese, "Connections on Principal and Vector Bundles".

July 2017: Stefano Ronchi, "Hyperbolic 3-manifolds by gluing polyhedra".

September 2016: Alice Mazzola, "La formula del punto Fisso di Lefschetz".

July 2016: Chiara Bai, "Superfici di Riemann compatte e Teorema di Riemann-Roch".

Research Interests

Equivariant asymptotic invariants of linearized line bundles. Existence of canonical metrics (Kähler-Einstein, extremal-Kähler and Kähler-Ricci solitons) on projective manifolds. Existence of canonical metrics in connection with geometric stability. Yau-Tian-Donaldson conjecture. Symplectic topology through special almost Kähler metrics.

Soliton equations associated to exceptional Lie groups. Geometric aspects of integrable systems.

Publications and preprints

- ADV, “Special homogeneous almost complex structures on symplectic manifolds”. arXiv:1706.06401.
- C. Arezzo, ADV and G. La Nave, “On the curvature of conic Kähler-Einstein metrics”. *J. Geom. Anal.* (2017).
- ADV, P. Lorenzoni and A. Savoldi, “Deformations of non semisimple Poisson pencils of hydrodynamic type”. *Nonlinearity*. 29 (2016), 2715–2754.
- ADV, “A note on Berezin-Toeplitz quantization of the Laplace operator”. *Complex Manifolds*. 2015; 2:131–139.
- C. Arezzo, ADV and G. La Nave, “Geometric flows and Kähler reduction”. *Journal Symplectic Geom.* 13 (2015), no. 2, 497–525.
- ADV, F. Zuddas, “Scalar curvature and asymptotic Chow stability of projective bundles and blowups”. *Trans. Amer. Math. Soc.* 364 (2012), no. 12, 6495–6511.
- C. Arezzo, ADV, and G. La Nave, “K-Destabilizing test configurations with smooth central fiber”. In: *Variational Problems in Differential Geometry (Leeds 2009)*. London Mathematical Society LNS 394. Cambridge University Press (2012).
- C. Arezzo, ADV and G. La Nave, “Singularities and K-semistability”. *Int. Math. Res. Not.* (2012) Vol. 2012 849-869 doi:10.1093/imrn/rnr044.
- C. Arezzo and ADV, “On the K -stability of complete intersections in polarized manifolds”. *Adv. Math.* 226 (2011), no. 6, 4796–4815.
- ADV, “CM-stability of blow-ups and canonical metrics”. arXiv:0810.5584.
- P. Casati, ADV and G. Ortenzi, “The Soliton Equations associated with the Affine Kac-Moody Lie Algebra $G_2^{(1)}$ ”. *J. Geom. Phys.* 58 (2008), 377–386.
- ADV, “Da Eulero a Lloyd Wright: topologia e architettura”. *Presenza Tecnica in edilizia*, no. 231 Nov-Dec 2007.
- ADV and R. Paoletti, “Moment maps and equivariant volumes”. *Acta Math. Sin. (Engl. Ser.)* 23 (2007), no. 12, 2155–2188.
- ADV, “Asymptotic growth of equivariant sections for linearized actions on complex projective manifolds”. Ph. D. Thesis, University of Milano-Bicocca, 2005.
- S. Cacciatori, B. L. Cerchiai, ADV, G. Ortenzi and A. Scotti, “Euler angles for G_2 ”. *J. Math. Phys.* 46 (2005), no. 8, 083512, 17 pp.
- ADV and R. Paoletti, “Equivariant volumes for linearized actions”. math.AG/0412433.

Language skills

- Italian (mother tongue)
- English (good written and oral)
- French (good written and oral)

Computer skills

- C, C++, HTML, CSS
- Maxima, Maple, Mathematica
- T_EX and L^AT_EX typesetting system
- Microsoft Windows, Mac OS X, Linux

Milano – May 16, 2018

Alberto Della Vedova