

CURRICULUM VITAE OF DANIELE VALERI
(ai fini della pubblicazione)

Current position

Lecturer in Mathematics at the University of Glasgow.

Past positions

- October 2017-August 2018 Assistant Professor at the Yau Mathematical Sciences Center (YMSC), Tsinghua University, Beijing.
- October 2014-September 2017 Postdoctoral fellow at the Yau Mathematical Sciences Center (YMSC), Tsinghua University, Beijing.
- October 2012-September 2014 Postdoctoral fellow at the International School for Advanced Studies (SISSA), Trieste.

Visiting positions

- June 2019 IHES, Bures-sur-Yvette.
- December 2017-February 2018 Università di Roma La Sapienza.
- June-July 2017 IHES, Bures-sur-Yvette.
- December 2016-February 2017 Università di Roma La Sapienza.
- July 2016 SISSA, Trieste.
- May 2016 University of Sydney, Australia.
- December 2015-February 2016 Università di Roma La Sapienza.
- April-May 2014 Mathematisches Forschungsinstitut Oberwolfach.
- October 2012 IHES, Bures-sur-Yvette.
- Fall semester 2011 Massachusetts Institute of Technology (MIT), Cambridge (MA).
- Spring semester 2011 Massachusetts Institute of Technology (MIT), Cambridge (MA).
- Spring semester 2010 Massachusetts Institute of Technology (MIT), Cambridge (MA).

Education

- March 2012 Ph.D. in Mathematics.
Sapienza Università di Roma.
Thesis title: Classical \mathcal{W} -algebras. Advisor: prof. Alberto De Sole.
- July 2008 Master degree in mathematics, grade 110/110 cum laude.
Sapienza Università di Roma.
Thesis title: Estensioni ciclotomiche: parità del numero di classe.
Thesis advisor: prof. M. J. de Resmini.
- July 2006 Bachelor degree in mathematics, grade 110/110 cum laude.
Università degli studi di Roma “La Sapienza”.
Thesis title: Sui T-gruppi. Thesis advisor: prof. M.J. de Resmini.

Qualifications

Qualified for the “Abilitazione Scientifica Nazionale a Professore Associato - Settore concorsuale 01/A2 Geometria e Algebra” (from July 31, 2017, to July 31, 2023) to work as Associate Professor in Geometry and Algebra at an Italian University.

Qualified for the “Abilitazione Scientifica Nazionale a Professore Associato - Settore concorsuale 01/A4 Fisica Matematica” (from July 13, 2018, to July 13, 2024) to work as Associate Professor in Mathematical Physics at an Italian University.

Publications and preprints

- Casati M., Lorenzoni P., Valeri D., Vitolo R., *Weakly nonlocal Poisson brackets: tools, examples, computations*, [arXiv:2101.06467 \[math-ph\]](#).
- De Sole A., Jibladze M., Kac V.G., Valeri D., *Integrable triples in semisimple Lie algebras*, [arXiv:2012.12913 \[nlin.SI\]](#).
- Valeri D., *W-algebras via Lax type operators*, [arXiv:2001.05751 \[math-ph\]](#).
- De Sole A., Jibladze M., Kac V.G., Valeri D., *Integrability of classical affine W-algebras*, accepted for publication in Transformation Groups.
- Carpentier S., De Sole A., Kac V.G., Valeri D., van de Leur J., *p-reduced multicomponent KP hierarchy and classical W-algebras $\mathcal{W}(\mathfrak{gl}_N, p)$* , Comm. Math. Phys. **380** (2020), no. 2, 655-722.
- De Sole A., Fedele L., Valeri D., *Generators of the quantum finite W-algebras in type A*, J. Algebra Appl. **19**, no. 9, 2050175 (76 pages).
- De Sole A., Kac V.G., Valeri D., Wakimoto M., *Poisson λ -brackets for differential-difference equations*, Int. Math. Res. Not. **2020** (2020), n.13, 4144-4190.
- De Sole A., Kac V.G., Valeri D., Wakimoto M., *Local and non-local multiplicative Poisson vertex algebras and differential-difference equations*, Comm. Math. Phys. **370** (2019), no. 3, 1019-1068.
- Genovese G., Lucà R., Valeri D., *Invariant measures for the periodic derivative nonlinear Schrödinger equation*, Math. Ann. **374** (2019), no. 3-4, 1075-1138.
- De Sole A., Kac V.G., Valeri D., *A Lax type operator for quantum finite W-algebras*, Sel. Math. New Ser. **24** (2018), no. 5, 4617-4657.
- Casati M., Valeri D., *MasterPVA and WALg: Mathematica packages for Poisson vertex algebras and classical affine W-algebras*, Boll. Unione Mat. Ital. **11** (2018), no. 4, 503-531.
- De Sole A., Kac V.G., Valeri D., *Classical affine W-algebras and the associated integrable Hamiltonian hierarchies for classical Lie algebras*, Comm. Math. Phys. **360** (2018), no. 3, 851-918.
- De Sole A., Kac V.G., Valeri D., *Finite W-algebras for \mathfrak{gl}_N* , Adv. Math. **327** (2018), 173-224.
- Masoero D., Raimondo A., Valeri D., *Bethe Ansatz and the Spectral Theory of affine Lie algebra-valued connections II. The non simply-laced case*, Comm. Math. Phys. **349** (2017), n. 3, 1063-1105.
- De Sole A., Kac V.G., Valeri D., *Classical affine W-algebras for \mathfrak{gl}_N and associated integrable Hamiltonian hierarchies*, Comm. Math. Phys. **348** (2016), n. 1, 265-319.
- De Sole A., Kac V.G., Valeri D., *A new scheme of integrability for (bi)Hamiltonian PDE*, Comm. Math. Phys. **347** (2016), n. 2, 449-488.
- De Sole A., Kac V.G., Valeri D., *Structure of classical (finite and affine) W-algebras*, J. Eur. Math. Soc. **18** (2016), n. 9, 1873-1908.
- Genovese G., Lucà R., Valeri D., *Gibbs measures associated to the integrals of motion of the periodic derivative nonlinear Schrödinger equation*, Sel. Math. New Ser. **22** (2016), n. 3, 1663-1702.
- Masoero D., Raimondo A., Valeri D., *Bethe Ansatz and the Spectral Theory of affine Lie algebra-valued connections I. The simply-laced case*, Comm. Math. Phys. **344** (2016), n. 3, 719-750.
- De Sole A., Kac V.G., Valeri D., *Adler-Gelfand-Dickey approach to classical W-algebras within the theory of Poisson vertex algebras*, Int. Math. Res. Not. **2015** (2015), n.21, 11186-11235.
- De Sole A., Kac V.G., Valeri D., *Double Poisson vertex algebras and non-commutative Hamiltonian equations*, Adv. Math. **281** (2015), 1025-1099.
- De Sole A., Kac V.G., Valeri D., *Integrability of Dirac reduced bi-Hamiltonian equations*, Trends in Contemporary Mathematics, Springer INDAM Series, vol. 8 (2014), 13-32.

De Sole A., Kac V.G., Valeri D., *Dirac reduction for Poisson vertex algebras*, Comm. Math. Phys. **331** (2014), n. 3, 1155-1190.

De Sole A., Kac V.G., Valeri D., *Classical \mathcal{W} -algebras and generalized Drinfeld-Sokolov hierarchies for minimal and short nilpotents*, Comm. Math. Phys. **331** (2014), n. 2, 623-676. Erratum in Commun. Math. Phys. **333** (2015), n. 3, 1617-1619.

Valeri D., *Classical \mathcal{W} -algebras within the theory of Poisson vertex algebras*, Advances in Lie Superalgebras, Springer INdAM series, vol. 7 (2013), 203-221.

De Sole A., Kac V.G., Valeri D., *Classical \mathcal{W} -algebras and generalized Drinfeld-Sokolov bi-Hamiltonian systems within the theory of Poisson vertex algebras*, Comm. Math. Phys. **323** (2013), n.2, 663-711.

Products on database	20
h-index	9
Total Citations	159
Average citations per product	7,95
Total impact factor	37,67
Average impact factor per product	1,88
Sources of information: Scopus/SCI Journal	

Teaching

- Spring 2021 *4H: Mathematical Physics*, University of Glasgow.
- Autumn 2020 *Mathematics 2A: Multivariable Calculus*, University of Glasgow.
- Spring 2020 *4H: Mathematical Physics*, University of Glasgow.
- Autumn 2019 *Mathematics 2A: Multivariable Calculus*, University of Glasgow.
- Spring 2019 *4H: Mathematical Physics*, University of Glasgow.
- Autumn 2018 *Mathematics 2A: Multivariable Calculus*, University of Glasgow.
Assistant for *3H: Writing and presenting mathematics*, University of Glasgow.
- Spring 2018 *Linear algebra 2*, Tsinghua University.
- Spring 2017 *Infinite dimensional Lie algebras*, course for the Ph.D. students in the YMSC.
- Spring 2016 *An introduction to vertex algebras*, course for the Ph.D. students in the YMSC.
- Autumn 2013 *Poisson vertex algebras and applications to integrable systems*, course for the Ph.D. in Geometry and Mathematical Physics, SISSA.
- Autumn 2010 Teaching assistant of prof. A. Figà Talamanca for *Calculus for Engineers*, Department of Electronic Engineering, University of Rome 3.
- Spring 2009 Teaching assistant of prof. A. Figà Talamanca for *Analysis 1* Department of mathematics, Sapienza University of Rome.

Mentoring

Supervisor of three Ph.D. students (Simone Castellan, Anna Clancy and Johan Wright) at the University of Glasgow.

Supervisor of six undergraduate and two master projects at the University of Glasgow.

Trainer for the students of Tsinghua University participating in the “S. T. Yau College Mathematics Contest” (July 2018) within the section “Algebra, Number Theory and Combinatorics”.

Supervisor of the “Junior Thesis” of Meng Fei Xia (defend on June 10, 2018) within the “Tsinghua University Talent Training Program”.

Grants and fellowships

“Research Fund for International Young Scientists” for the period 01/01/2016-12/31/2016 funded by the

National Natural Science Foundation of China (NSFC) for the project “ \mathcal{W} -algebras and applications ” (Grant No. 11550110178).

1-Year Grant (2014-2015) funded by INdAM in the framework "Progetto Giovani" for the project "ODE/IM Correspondence" in collaboration with D. Masoero (Universidade de Lisboa) and A. Raimondo (Milano Bicocca).

"Research in pairs" fellowship at the Mathematisches Forschungsinstitut Oberwolfach for the project "Invariant measures for 1d DNLS" in collaboration with G. Genovese (Zurich Universitat) and R. Lucà (ICMAT Madrid).

Talks

SISSA, November 11, 2020: *Vertex algebras in representation theory, geometry and mathematical physics*. Virtual Seminar Series - Integrable Systems (hosted by ICMS), July 1, 2020: *Deformations of W -algebras and differential-difference equations*.

University of Glasgow, Integrability, algebra and geometry, December 13, 2019: *Newbie approach to classical R -matrices*.

University of York, Mathematical Physics Seminar, October 17, 2019: *Classical W -algebras and reductions of KP hierarchy*.

Euler Institute, Saint Petersburg, Workshop on Classical and Quantum Integrable Systems, July 24, 2019: *Lax type operators for W -algebras*.

CRM Montréal, XIth International Symposium: Quantum Theory and Symmetries (Integrability Session), July 5, 2019: *Differential-difference equations and deformations of W -algebras*.

CRM Montréal, XIth International Symposium: Quantum Theory and Symmetries, July 5, 2019: *Algebraic structures arising from physics*.

Leeds University, Brackets, Reduction and Integrability, May 18, 2019: *Differential-difference equations and deformations of W -algebras*.

University of Kent, One day workshop on W -algebras, April 30, 2019: *Differential-difference equations and deformations of W -algebras*.

University of Birmingham, Geometry and Mathematical Physics Seminar, March 27, 2019: *Algebraic structures arising from physics*.

ICMS Edinburgh, EMPG Seminar, March 20, 2019: *Differential-difference equations and deformations of W -algebras*.

Loughborough University, Integrable Day 2018, November 30, 2018: *Lambda-brackets for differential-difference equations*.

University of Glasgow, ISMP Seminar, October 9, 2018: *Algebraic structures arising from physics*.

SISSA, May 3, 2018: *Algebraic structures arising from physics*.

University of Edinburgh, MAXIMALS Seminar, February 13, 2018: *Algebraic structures arising from physics*.

SISSA, Seminar in Integrable Systems, July 12, 2017: *Classical affine W -algebras associated to classical Lie algebras*.

Korea Institute for Advanced Studies (KIAS), Seoul, April 17, 2017: *ODE/IM correspondence for simple Lie algebras*.

Sun Yat-Sen University, Guangzhou, March 24, 2017: *W -algebras in type A* .

Università di Milano-Bicocca, January 24, 2017: *Generalized Drinfeld-Sokolov hierarchies in type A* .

Sapienza Università di Roma, Seminario di Algebra e Geometria, January 18, 2017: *Algebraic aspects of the ODE/IM correspondence*.

University of Melbourne, W -algebras Workshop, November 28, 2016: *Introduction to vertex algebras*.

YMSC, The 2nd YMSC Post-doc Workshop, October 22, 2016: *ODE/IM correspondence and beyond*.

SISSA, Seminar on W-algebras and Integrable Systems, July 29, 2016: *Adler type pseudodifferential operators and generalized Drinfeld-Sokolov hierarchies in type A*.

SISSA, Seminar on W-algebras and Integrable Systems, July 15, 2016: *Classical W-algebras*.

University of Sydney, Algebra Seminar, May 6, 2016: *Classical W-algebras for \mathfrak{gl}_N and associated integrable hierarchies*.

Sapienza Università di Roma, Algebraic Geometry and Representation Theory in Rome, December 22, 2015: *Adler type pseudodifferential operators and integrable systems*.

YMSC, The YMSC Post-doc Workshop, November 7, 2015: *Adler type pseudodifferential operators and integrable systems*.

YMSC, Geometry and Physics Seminar (GPS), October 27, 2015: *Classical W-algebras and generalized Drinfeld-Sokolov hierarchies*.

Centro di Ricerca Matematica E. De Giorgi, Pisa, Perspectives in Lie theory: Vertex algebras, W-algebras, and applications, December 12, 2014: *Classical W-algebras and generalized Drinfeld-Sokolov hierarchies*.

University of Milano-Bicocca, Workshop on Geometric and Analytic Aspects of Integrable and nearly-Integrable Hamiltonian Systems, June 19, 2014: *Structure of classical (finite and affine) W-algebras*.

SISSA, Integrable Systems and Mathematical Physics seminar, April 2, 2014: *Structure of classical W-algebras*.

ETH, Talks in Mathematical Physics, December 12, 2013: *Classical W-algebras and applications*.

SISSA, Seminar in Integrable Systems, April 10, 2013: *Classical W-algebras within the theory of Poisson vertex algebras II*.

SISSA, Seminar in Integrable Systems, January 16, 2013: *Classical W-algebras within the theory of Poisson vertex algebras*.

INDAM, Lie superalgebras conference, December 11, 2012: *Classical W-algebras within the theory of Poisson vertex algebras*.

Sapienza University of Rome, Seminario di Algebra e Geometria, January 18, 2012: *Classical W-algebras*.

Sapienza University of Rome, Seminario dottorandi, June 8 and 15, 2011: *Algebra di vertice di Poisson e equazioni Hamiltoniane*.

Northeastern University, Graduate student seminar, March 16, 2011: *Poisson vertex algebras and Drinfeld-Sokolov Hamiltonian reduction*.

Services

Organizer of the conference *Integrability, algebra and geometry*, University of Glasgow, December 13, 2019.

Organizer of the *56th ARTIN Meeting: Algebra and Representation Theory in the North*, University of Edinburgh, November 28-29, 2019.

Organizer of the conference *Integrable systems, special functions and combinatorics*, Sabhal Mòr Ostaig, the Gaelic College, the Isle of Skye, June 23-28, 2019.

Organizer of the Integrable Systems and Mathematical Physics (ISMP) seminar at the School of Mathematics and Statistics of the University of Glasgow during the academic years 2018-2019 and 2019-2020.

Thesis referee and committee member for the Ph.D. thesis defense of Laura Fedele (with N. Cantarini and A. D'Andrea) at Università di Roma La Sapienza, January 2018.

Organizer of the conference *Hamiltonian PDES, Frobenius manifolds and Deligne-Mumford moduli spaces*, SISSA, Trieste, September 16-20, 2013.

Organizer of the conference *MJR: a conference in honour of Marialuisa J. de Resmini*, Sapienza University of Rome, September 24-25, 2009.

Refereeing activity for the journals: Communications in Mathematical Physics, International Journal of Mathematics, IMRN, Journal of Algebra, Journal of Mathematical Physics, Journal of Noncommutative Geometry, Journal of Pure and Applied Algebra, Letters in Mathematical Physics, Science China Mathematics.