

**UNIVERSITÀ DEGLI STUDI DI MILANO**

selezione pubblica per n.1\_ posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale 01/A2 - Geometria e Algebra, settore scientifico-disciplinare \_MAT/03 - Geometria\_\_\_\_\_  
presso il Dipartimento di \_MATEMATICA "Federico Enriques"\_\_\_\_\_,  
(avviso bando pubblicato sulla G.U. n. \_46\_ del 11/06/2021\_\_\_\_\_) Codice concorso 4773\_\_\_\_

**[Nome e cognome]  
CURRICULUM VITAE**

(N.B. IL CURRICULUM NON DEVE ECCEDERE LE 30 PAGINE E DEVE CONTENERE GLI ELEMENTI CHE IL CANDIDATO RITIENE UTILI AI FINI DELLA VALUTAZIONE.

LE VOCI INSERITE NEL FACSIMILE SONO A TITOLO PURAMENTE ESEMPLIFICATIVO E POSSONO ESSERE SOSTITUITE, MODIFICATE O INTEGRATE)

**INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)**

COGNOME	TORIELLI
NOME	MICHELE
DATA DI NASCITA	[ Giorno, mese, anno ] 13/01/1984

**TITOLI****TITOLO DI STUDIO**

(indicare la Laurea conseguita inserendo titolo, Ateneo, data di conseguimento, ecc.)

- Laurea triennale in Matematica, Università' di Genova, 14/07/2006, 110/110 cum laude
- Laurea specialistica in Matematica, Università' di Genova, 17/07/2008, 110/110 cum laude

**TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO**

(inserire titolo, ente, data di conseguimento, ecc.)

- Dottorato in Matematica, University of Warwick (UK), 05/11/2012.

**CONTRATTI DI RICERCA, ASSEGNI DI RICERCA O EQUIVALENTI**

(per ciascun contratto stipulato, inserire università/ente, data di inizio e fine, ecc.)

- JSPS Fellowship, Hokkaido University (Japan), dal 21/10/2012 al 20/10/2014
- Assegno di ricerca in Geometria Algebrica, Università' di Torino, dal 01/11/2014 al 31/10/2015
- Posizione di Assistant Professor, Hokkaido University (Japan), a partire dal 16/01/2016

**ATTIVITÀ DIDATTICA A LIVELLO UNIVERSITARIO IN ITALIA O ALL'ESTERO**

(inserire anno accademico, ateneo, corso laurea, numero ore, ecc.)

- Anno accademico 2008/2009, University of Warwick, Supervision of Undergraduate students, 90 ore.
- Anno accademico 2009/2010, University of Warwick, Supervision of Undergraduate students, 120 ore.
- Anno accademico 2009/2010, University of Warwick, Manifolds (teaching assistant), 16 ore.

- Anno accademico 2009/2010, University of Warwick, Intro to Topology (teaching assistant), 16 ore.
- Anno accademico 2010/2011, University of Warwick, Supervision of Undergraduate students, 120 ore.
- Anno accademico 2010/2011, University of Warwick, Manifolds (teaching assistant), 16 ore.
- Anno accademico 2010/2011, University of Warwick, Intro to Topology (teaching assistant), 16 ore.
- Anno accademico 2011/2012, University of Warwick, Supervision of Undergraduate students, 90 ore.
- Anno accademico 2011/2012, University of Warwick, Manifolds (teaching assistant), 16 ore.
- Anno accademico 2016/2017, Hokkaido University, Linear Algebra I, 30 ore.
- Anno accademico 2016/2017, Hokkaido University, Linear Algebra II, 30 ore.
- Anno accademico 2017/2018, Hokkaido University, Linear Algebra I, 30 ore.
- Anno accademico 2018/2019, Hokkaido University, Linear Algebra I, 30 ore.
- Anno accademico 2018/2019, Hokkaido University, Linear Algebra II, 30 ore.
- Anno accademico 2018/2019, Hokkaido University, Hokkaido Summer Institute course for Master and Ph.D. students, "Hyperplane arrangements and computations with CoCoA", 10 ore.
- Anno accademico 2019/2020, Hokkaido University, Linear Algebra I, 30 ore.
- Anno accademico 2019/2020, Hokkaido University, Linear Algebra II, 30 ore.
- Anno accademico 2020/2021, Hokkaido University, Linear Algebra I (on line), 30 ore.
- Anno accademico 2020/2021, Hokkaido University, Calculus I (on line), 30 ore.
- Anno accademico 2021/2022, Hokkaido University, Linear Algebra I (on line), 30 ore.
- Anno accademico 2021/2022, Hokkaido University, Calculus I (on line), 30 ore.
- Relatore (insieme al Professor Yoshinaga) dello studente di dottorato in Matematica Guo Weili presso il Dipartimento di Matematica dell'Hokkaido University. Titolo della tesi "On the Falk invariant of an arrangement". Dal 01/09/2016 al 30/07/2019.

#### DOCUMENTATA ATTIVITÀ DI FORMAZIONE O DI RICERCA PRESSO QUALIFICATI ISTITUTI ITALIANI O STRANIERI;

(inserire anno accademico, ente, corso, periodo, ecc.)

#### DOCUMENTATA ATTIVITÀ IN CAMPO CLINICO

(indicare, data, durata, ruolo, ente presso il quale si è prestata attività assistenziale, ecc.)

#### REALIZZAZIONE DI ATTIVITÀ PROGETTUALE

(indicare, data, progetto, ecc.)

- PI del "JSPS Grant-In-Aid for Scientific Research". Ammontare della borsa: 2400000 JPY (ad oggi corrispondenti a 18300 euro) dal 21/10/2012 al 20/10/2014.
- PI del "MEXT grant for Tenure Tracking system". Ammontare della borsa: 12000000 JPY (ad oggi corrispondenti a 91500 euro) dal 16/01/2016 al 31/03/2017
- PI del "Budget Support for The Leader Developing Program" per l'organizzazione della conferenza "A walk between hyperplane arrangements, computer algebra and algorithm", Hokkaido University, Sapporo, Japan, 31st January - 2nd February 2018. Ammontare della borsa 500000 JPY (ad oggi corrispondenti a 3800 euro) dal 01/09/2017 al 31/03/2018.
- PI del "Budget Support for The Leader Developing Program" per l'organizzazione della conferenza "On hyperplane arrangements, configuration spaces and related topics", Hokkaido University, Sapporo, Japan, 20-22 February 2019. Ammontare della borsa 500000 JPY (ad oggi corrispondenti a 3800 euro) dal 01/09/2018 al 31/03/2019.
- PI del "JSPS Grant-in-Aid for Early-Career Scientists" dal titolo "On the algebra and combinatorics of hyperplane arrangements" n. 19K14493. Ammontare della borsa: 4300000 JPY (ad oggi corrispondenti a 30500 euro) dal 01/04/2019 al 31/03/2022. Questo e' un peer-review grant come si puo' vedere dal sito: <https://www.jsps.go.jp/english/e-grants/>

- Organizzatore del “Workshop on hyperplane arrangements and singularity theory” svoltosi alla Hokkaido University dal 22/03/2016 al 25/03/2016.
- Organizzatore della “Pisa-Hokkaido Summer School on Mathematics and its Applications” svoltasi al Centro di Ricerca “Ennio De Giorgi” di Pisa dal 29/08/2016 al 17/09/2016.
- Organizzatore del Workshop “Perspectives on arrangements and configuration spaces” svoltosi all’Università di Pisa dal 08/09/2016 al 09/09/2016.
- Organizzatore del Workshop “Mathematical methods and Practice in Cryptography, Security and Bigdata” svoltosi alla Hokkaido University dal 19/12/2016 al 21/12/2016.
- Organizzatore del Workshop “Hyperplane arrangements and related topics” svoltosi alla Hokkaido University dal 13/02/2017 al 14/02/2017.
- Organizzatore del Workshop “A walk between hyperplane arrangements, computer algebra and algorithm” svoltosi alla Hokkaido University dal 31/01/2018 al 02/02/2018.
- Organizzatore del Hokkaido Summer Institute 2018 course “Hyperplane arrangements and computations with CoCoA” svoltosi alla Hokkaido University dal 13/08/2018 al 17/08/2018.
- Organizzatore del Workshop “On hyperplane arrangements, configuration spaces and related topics” svoltosi alla Hokkaido University dal 20/02/2019 al 22/02/2019.

#### **ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI, O PARTECIPAZIONE AGLI STESSI**

*(per ciascuna voce inserire anno, ruolo, gruppo di ricerca, ecc.)*

- Membro del “Singularity theory group” del Dipartimento di Matematica della Warwick University, UK dal 01/09/2008 al 30/09/2012.
- Membro del gruppo di Algebra del Dipartimento di Matematica dell’ Hokkaido University, Japan dal 21/10/2012 al 20/10/2014.
- Membro del “GNSAGA - Gruppo Nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni” dal 01/11/2014 al 31/10/2015.
- Membro del gruppo di “Algebra e Geometria Algebrica” del Dipartimento di Matematica “G. Peano” dell’Università di Torino, Italy dal 01/11/2014 al 31/10/2015
- Membro del gruppo di Geometria del Dipartimento di Matematica dell’ Hokkaido University, Japan <https://www2.sci.hokudai.ac.jp/dept/math/en/researcher/> dal 14/01/2016 ad oggi.
- Membro del “GI-CoRE and GSB group” dell’Hokkaido University, Japan <https://gi-core.oia.hokudai.ac.jp/gsb/members/> dal 01/07/2018 ad oggi
- Direttore del progetto di ricerca “On the algebra and combinatorics of hyperplane arrangements” finanziato dalla Japan Society for the Promotion of Science (JSPS Grant-in-Aid for Early-Career Scientists 19K14493) dal 01/04/2019 al 31/03/2022.

#### **TITOLARITÀ DI BREVETTI**

*(per ciascun brevetto, inserire autori, titolo, tipologia, numero brevetto, ecc.)*

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#### **ATTIVITÀ DI RELATORE A CONGRESSI E CONVEGNI NAZIONALI E INTERNAZIONALI**

*(inserire titolo congresso/convegno, data, ecc.)*

1. Singularity seminar, University of Warwick, United Kingdom, 19th January 2009. Title: “Calculation and geometry of some versal deformations”.
2. Singularity seminar, University of Warwick, United Kingdom, 26th October 2009. Title: “Deformations of singularities I”.
3. Singularity seminar, University of Warwick, United Kingdom, 2nd November 2009. Title: “Deformations of singularities II”.
4. Postgraduate seminar, University of Warwick, United Kingdom, 3rd March 2010. Title: “Linear free divisor and quiver representations”.
5. Workshop on free divisors, University of Warwick, United Kingdom, 3rd June 2011. Title: “Rigidity of reductive linear free divisors”.

6. Mannheim Seminar, Mannheim University, Germany, 7th November 2011. Title: "A deformation theory for free and linear free divisors".
7. Johannes Gutenberg University, Mainz, Germany, 31st January 2012. Title: "Admissible deformations of free divisors".
8. Angers University, Angers, France, 2nd March 2012. Title: "The theory of admissible deformations of a free divisor".
9. Workshop on free divisors and differential equations, Tokyo University of Agriculture and Technology, Japan, 16th November 2012. Title: "Admissible deformations of free divisors".
10. Hokkaido University, Sapporo, Japan, 19th November 2012. Title: "Admissible deformations of free divisors".
11. Kyoto University, Kyoto, Japan, 30th November 2012. Title: "Admissible deformations of free divisors".
12. Hokkaido University, Sapporo, Japan, 14th December 2012. Title: "Ring and rank conditions for free divisors".
13. Branched coverings, degenerations, and related topics, Tokyo Metropolitan University, Japan, 9th March 2013. Title: "Moduli space of a line-conic arrangement in the complex projective plane".
14. Warwick University, Coventry, United Kingdom, 17th July 2013. Title: "The moduli space of line-conic arrangements".
15. Hokkaido University, Sapporo, Japan, 7th November 2013. Title: "On the admissibility of certain local systems".
16. Hyperplane arrangements and characteristic classes, RIMS, Kyoto, Japan, 13th November 2013. Title: "On the admissibility of certain local systems".
17. AMS special session titled "Hyperplane arrangements and applications" at the Joint Mathematics Meetings, Baltimore, USA, 15th January 2014. Title: "Admissible local systems and characteristic variety".
18. Genoa University, Genoa, Italy, 3rd June 2014. Title: "Resonant bands, Aomoto complex and real 4-nets".
19. First Workshop of JSPS-MAE Sakura Program "Geometry and Combinatorics of Hyperplane Arrangements", Hokkaido University, Sapporo, September 2014. Title: "Resonant bands, Aomoto complex and real 4-nets".
20. Hokkaido University, Sapporo, Japan, 1st October 2014. Title: "On the homotopy type and the Orlik-Solomon algebra of supersolvable arrangements".
21. Fribourg University, Fribourg, Switzerland, 27th November 2014. Title: "Supersolvable arrangements and their minimal complex".
22. Turin University, Turin, Italy, 17th December 2014. Title: "Hyperplane arrangements, Orlik-Solomon algebras, Milnor fiber and multinets".
23. Hyperplane arrangements, University of Bremen, Germany, December 2014. Title: "On the homotopy type and the Orlik-Solomon algebra of supersolvable arrangements".
24. Politecnico of Turin, Turin, Italy, 21st January 2015. Title: "Supersolvable arrangements and their Orlik-Solomon algebra".
25. Differential and combinatorial aspects of singularities, Kaiserslautern University of Technology, Germany, 6th August 2015. Title: "Homotopy type, Orlik-Solomon algebra and Milnor fiber of supersolvable arrangements".
26. Turin University, Turin, Italy, 11th November 2015. Title: "On the Milnor fiber of an hyperplane arrangement".
27. Arrangements: topology, combinatorics and stability, Pisa University, Italy, 6th February 2016. Title: "Homotopy type, Orlik-Solomon algebra and Milnor fiber of supersolvable arrangements".
28. Program: GSB UMass-HU Business Meeting, Hokkaido University, Japan, 16th May 2016. Title: "Singularities, hyperplane arrangements and codes".
29. Hokkaido University, Sapporo, Japan, 9th June 2016. Title: "Combinatorics of hyperplane arrangements and applications".
30. Hokkaido University, Sapporo, Japan, 27th July 2016. Title: "Sectional matrices and geometrical consequences of their extremal behaviour".

31. Special Session at the AMS 2016 Fall Eastern Sectional Meeting, Bowdoin College, Brunswick, USA, 24th September 2016. Title: "Sectional matrices and geometrical consequences of their extremal behaviour".
32. The 12th HU and SNU Symposium on Mathematics, Hokkaido University, Sapporo, 5th December 2016. Title: "Sectional matrix, generic initial ideal and free arrangements".
33. Genoa University, Genoa, Italy, 15th March 2017. Title: "Freeness of certain sign graphic arrangements".
34. Hokkaido University, Sapporo, Japan, 12th of April 2017. Title: "On the Falk invariant of sign graphic arrangements".
35. Workshop "Log geometry, degenerations and related topics", Kobe University, Japan, 20th February 2018. Title: "Sectional matrix, generic initial ideal and free hyperplane arrangements".
36. Tokyo Denki University, Tokyo, Japan, 13th of March 2018. Title: "The connections between sectional matrices, generic initial ideals and free hyperplane arrangements".
37. Discrete Math Seminar, UMass Amherst, USA, 6th of September 2018. Title: "On the freeness of arrangements associated to gain graphs".
38. Valley Geometry Seminar, UMass Amherst, USA, 7th of September 2018. Title: "On the characterizations of free hyperplane arrangements".
39. Pick My Brain Seminar, Northeastern University, Boston, USA, 12th of September 2018. Title: "On the freeness of hyperplane arrangements".
40. Shinshu Topology Seminar, Shinshu University, Matsumoto, Japan, 7th December 2018. Title: "Free hyperplane arrangements and gain graphs".
41. RIMS Symposium "Computer Algebra - Theory and its applications", RIMS, Kyoto, Japan, 20th December 2018. Title: "Sectional matrices, generic initial ideals and free hyperplane arrangements".
42. Workshop "On hyperplane arrangements, configuration spaces and related topics", Hokkaido University, Sapporo, Japan, 21st February 2019. Title: "On the associated primes of hyperplane arrangements".
43. Workshop "Recent advances in matroids and Tutte polynomials", Hokkaido University, Sapporo, Japan, 25th July 2019. Title: "Combinatorially equivalent hyperplane arrangements".
44. Workshop "Hyperplane arrangements in Wakkanai", Wakkanai Hokusei Gakuen University, Japan, 22nd August 2019. Title: "Associated primes and localization of hyperplane arrangements".
45. Workshop "Hyperplane Arrangements and Reflection Groups", Leibniz Universität Hannover, Germany, 25th September 2019. Title: "A modular approach to hyperplane arrangements".
46. Special session "Algebraic Geometry from an Algorithmic Point of View" at the 26th Conference on Applications of Computer Algebra (ACA 2021), Virtual, Online, July 2021. Title: "Hyperplane arrangements and k-Lefschetz properties".

**CONSEGUIMENTO DI PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA**  
*(inserire premio, data, ente organizzatore, ecc.)*

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**POSSESSO DEL DIPLOMA DI SPECIALIZZAZIONE EUROPEA RICONOSCIUTO DA BOARD INTERNAZIONALI**  
**(relativamente a quei settori concorsuali nei quali è prevista)**  
*(indicare diploma, data di conseguimento, ecc.)*

- Ottenimento della "French qualification" il 04/02/2014
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**TITOLI DI CUI ALL'ARTICOLO 24 COMMA 3 LETTERA A) E B) DELLA LEGGE 30 DICEMBRE 2010, N. 240**  
*(indicare se contratto di tipologia A o B, Ateneo, data di decorrenza e fine contratto, ecc.)*

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## **PRODUZIONE SCIENTIFICA**

### **PUBBLICAZIONI SCIENTIFICHE**

*(per ciascuna pubblicazione indicare: nomi degli autori, titolo completo, casa editrice, data e luogo di pubblicazione, codice ISBN, ISSN, DOI o altro equivalente)*

1. M. Torielli, Deformations of free and linear free divisors, Ann. Inst. Fourier (Grenoble), vol. 63(6), 2097-2136, (2013).
2. S. Nazir, M. Torielli and M. Yoshinaga, On admissibility of certain local systems. Topology and its Applications, vol. 178, 288-299, 2014.
3. M. Torielli and M. Yoshinaga, Resonant bands, Aomoto complex, and real 4-nets. Journal of Singularities, vol. 11, 33-50, 2015.
4. S. Settepanella and M. Torielli, On an explicit correspondence between nbc-basis, chambers and minimal complex for real supersolvable arrangements. Australasian Journal of Combinatorics, vol. 75(2), 223-245, 2019.
5. A.M. Bigatti, E. Palezzato and M. Torielli, Extremal behaviour in sectional matrices. Journal of Algebra and its Applications, vol. 18(3), 2019. <https://doi.org/10.1142/s02194-988-1950-0415>.
6. W. Guo and M. Torielli, On the Falk invariant of sign graphic arrangements. Graphs and Combinatorics, 34(3), 477-488, 2018. <https://doi.org/10.1007/s00373-018-1887-7>.
7. D. Suyama, M. Torielli and S. Tsujie, Signed graphs and freeness of the Weyl subarrangements of type  $B_l$ . Discrete Mathematics, vol. 342(1), 233-249, 2019. <https://doi.org/10.1016/j.disc.2018.09.029>.
8. A.M. Bigatti, E. Palezzato and M. Torielli, New characterizations of freeness for hyperplane arrangements. Journal of Algebraic Combinatorics, 51(2), 297-315, 2020. <https://doi.org/10.1007/s10801-019-00876-9>.
9. E. Palezzato and M. Torielli, Free hyperplane arrangements over arbitrary fields. Journal of Algebraic Combinatorics, 52(2), 237-249, 2020. <https://doi.org/10.1007/10.1007/s10801-019-00901-x>.
10. E. Palezzato and M. Torielli, Hyperplane arrangements in CoCoA. Journal of Software for Algebra and Geometry, vol. 9(1), 43-54, 2019. DOI 10.2140/jsag.2019.9.43.
11. B. Pahlavsay, E. Palezzato and M. Torielli, 3-tuple total domination number of rook's graphs. Discussiones Mathematicae Graph Theory. <https://doi.org/10.7151/dmgt.2242>.
12. E. Palezzato and M. Torielli, Lefschetz properties and hyperplane arrangements. Journal of Algebra, vol. 555, 289-304, 2020. <https://doi.org/10.1016/j.jalgebra.2020.02.039>.
13. W. Guo and M. Torielli, On the Falk invariant of hyperplane arrangements attached to gain graphs. Australasian Journal of Combinatorics, vol. 77(3), 301-317, 2020.
14. M. Torielli and S. Tsujie, Freeness of hyperplane arrangements between boolean arrangements and Weyl arrangements of type  $B_l$ . The Electronic Journal of Combinatorics, 27(3), 2020. <https://doi.org/10.37236/9341>.
15. E. Palezzato and M. Torielli, Localization of plus-one generated arrangements. Communications in Algebra, vol. 49(1), 301-309, 2021. <https://doi.org/10.1080/00927872.2020.1798976>.
16. W. Guo and M. Torielli, On the Falk invariant of Shi and Linial arrangements. Discrete & Computational Geometry, 2020. <https://doi.org/10.1007/s00454-020-00266-0>.
17. B. Pahlavsay, E. Palezzato and M. Torielli, Domination in latin square graphs. Graphs and Combinatorics, 37(3), 971-985, 2021. <https://doi.org/10.1007/s00373-021-02297-7>.
18. E. Palezzato and M. Torielli, Combinatorially equivalent hyperplane arrangements. Advances in Applied Mathematics, vol. 128, 2021. <https://doi.org/10.1016/j.aam.2021.102202>.
19. A.M. Bigatti, E. Palezzato and M. Torielli, Two new characterizations of free hyperplane arrangements. Monografias de la Real Academia de Ciencias. Zaragoza. 43: 59-62, (2018). ISSN: 1132-6360.

20. A.M. Bigatti, E. Palezzato and M. Torielli, Generic initial ideals, sectional matrices and free hyperplane arrangements. RIMS Kokyuroku 2138 “Computer Algebra - Theory and its Applications”, Research Institute for Mathematical Sciences, Kyoto University, 119-123, 2019.
21. E. Palezzato and M. Torielli, Free hyperplane arrangements over arbitrary fields and their computation with CoCoA. RIMS Kokyuroku 2138 “Computer Algebra - Theory and its Applications”, Research Institute for Mathematical Sciences, Kyoto University, 124-129, 2019.
22. E. Palezzato and M. Torielli, Hyperplane arrangements and k-Lefschetz properties. Mathematisches Forschungsinstitut Oberwolfach, Report No. 5/2021 “Logarithmic Vector Fields and Freeness of Divisors and Arrangements: New perspectives and applications”, doi.org/10.4171/OWR/2021/5.
23. M. Torielli. Freeness for multiarrangements of hyperplanes over arbitrary fields. arXiv:1912.09266.
24. E. Palezzato and M. Torielli, k-Lefschetz properties, sectional matrices and hyperplane arrangements. arXiv:2003.06294.
25. F. Kazemnejad, B. Pahlavsay, E. Palezzato and M. Torielli, Domination number of middle graphs. arXiv:2008.02975.
26. F. Kazemnejad, B. Pahlavsay, E. Palezzato and M. Torielli, Total dominator coloring number of middle graphs. arXiv:2104.12305.

Data

07/07/2021

Luogo

Sapporo