Ugo Bruzzo

PUBLICATION LIST

(as of August 6, 2023)

I have classified my papers as "journal papers" or "proceeding papers" according to whether they contain original results or not, regardless of their editorial collocation.

Books

- 1. (with B. Graña Otero) *Derived functors and sheaf cohomology*, Contemporary Mathematics and Its Applications: Monographs, E, vol. 2. World Scientific (2020). xiv+199 pp.
- 2. (with C. Bartocci and D. Hernández Ruipérez) Fourier-Mukai and Nahm transforms in geometry and mathematical physics, Progress in Mathematics 276, Birkhäuser 2009. xvi+423 pp.
- 3. (with C. Bartocci and D. Hernández Ruipérez) *The geometry of supermanifolds*, Kluwer 1991. xix+242 pp.

Preprints

- 1. (with P. Dalakov) Seiberg-Witten differentials on the Hitchin base, arXiv:2302.09912 [math.AG].
- 2. (with B. Graña Otero and D. Hernández Ruipérez) On a conjecture about Higgs bundles and some inequalities, arXiv:2208.10554 [math.AG].
- 3. (with D. Hernández Ruipérez and Y.I. Manin) SUSY Nori motives, arXiv: 2203.15855 [math.AG].
- (with W.D. Montoya) Deformation of pairs and Noether-Lefschetz loci in toric varieties, arXiv:2203. 00664 [math.AG].
- 5. (with W.D. Montoya) An asymptotic description of Noether-Lefschetz components in toric varieties, arXiv: 1905.01570 [math.AG]. Version 3 uploaded in January 2022.

Published papers

- (with P. Fré, U. Shahzad and M. Trigiante) D3-brane supergravity solutions from Ricci-flat metrics on canonical bundles of Kähler-Einstein surfaces, Lett. Math. Phys. 113 (2023), no. 3, 64.
- (with A. Capasso) Filtrations of numerically flat Higgs bundles and curve semistable Higgs bundles on Calabi-Yau manifolds, Adv. Geom. 23 (2023) 215–222.
- (with D. Hernández Ruipérez and A. Polishchuk) Notes on fundamental algebraic supergeometry. Hilbert and Picard superschemes, Adv. Math. 415 (2023) 108890, 115 pp.
- (with V. Peragine) Moduli of rank 2 Higgs sheaves on elliptic surfaces, Geom. Dedicata 217 (2023), no. 2, Paper No. 24.
- (with W.D. Montoya) Codimension bounds for the Noether-Lefschetz components for toric varieties, Eur. J. Math. 11 (2022) 806-814.
- 11. (with V. Peragine) Semistable Higgs bundles on elliptic surfaces, Adv. Geom. 22 (2022) 151–169.
- (with D. Hernández Ruipérez) The supermoduli of SUSY curves with Ramond punctures. Rev. Real Acad. Ciencias Exactas Fis. Nat. Serie A Mat. 115 (2021) Art. no. 114, 33 pp.
- (with M. Bianchi, P. Fré and D. Martelli) Resolution à la Kronheimer of C³/Γ singularities and the Monge-Ampère equation for Ricci-flat Kähler metrics in view of D3-brane solutions of supergravity. Lett. Math. Phys. 111 (2021) Art. no. 79, 79 pp. (Boris Dubrovin Memorial Issue).
- 14. (with W.D. Montoya) On the Hodge conjecture for quasi-smooth intersections in toric varieties. São Paulo J. Math. Sci. 15 (2021) 682–694 (Proceedings of the 5th Workshop on Geometry in Algebra and Algebra in Geometry, held in 2019 at Universidad de Antioquia, Medellín, Colombia).
- (with V. Rubtsov) Koszul complexes and spectral sequences associated with Lie algebroids, São Paulo J. Math. Sci. 15 (2021) 495–504 (Proceedings of the Workshop "J.-L. Koszul in São Paulo, his work and legacy," São Paulo, 13-14 November 2019).

- (with A. Grassi) On the Hodge conjecture for hypersurfaces in toric varieties, Commun. Anal. Geom. 28 (2020) 1773-1786. K. Uhlenbeck's 75th birthday volume, part II.
- (with C. Bartocci, V. Lanza and C.L.S. Rava) On the irreducibility of some quiver varieties, SIGMA 16 (2020) Paper No. 69, 13 pages (G. Landi's 60th birthday volume).
- (with A. Grassi and A. F. Lopez) Existence and density of general components of the Noether-Lefschetz locus on normal threefolds, Int. Math. Res. Notes. Vol. 2021, Issue 17, September 2021, pp. 13416–13433.
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- (with E. Aldrovandi and V. Rubtsov) Lie algebroid cohomology and Lie algebroid extensions, J. of Algebra 505 (2018) 456–481.
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- (with M. Pedrini, F. Sala and R. J. Szabo) Framed sheaves on root stacks and supersymmetric gauge theories on ALE spaces, Adv. Math. 288 (2016) 1175–1308.
- 32. (with D. Markushevich and A. Tikhomirov) Symplectic instanton bundles on \mathbb{P}^3 and 't Hooft instantons, European J. Math. **2** (2016) 1550040 (26 pages).
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- (with B. Graña Otero) Approximate Hermitian-Yang-Mills structures on semistable principal Higgs bundles, Ann. Global Anal. Geom. 47 (2015) 1–11.
- (with C. Bartocci and C. L. S. Rava) Monads for framed sheaves on Hirzebruch surfaces, Adv. Geom. 15 (2015) 55-76. Erratum, Adv. Geom. 20 (2015) 531-534. Revision, incorporating the erratum, posted in arXiv:1205.3613v5 [math.AG].
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Other publications

- (with C. Bartocci, V. Lanza and C. L. S. Rava) ADHM data for the Hilbert scheme of points of the total space of $\mathcal{O}_{\mathbb{P}^1}(-n)$, arXiv:1403.0460 [math.AG]. Subsumed by paper 27.
- I have written 13 lecture note sets on various topics in algebraic and differential geometry and mathematical physics.
- I have translated into Italian the book "Inside relativity" by D. E. Mook and T. Vargish, Princeton University Press 1987.
- I have written (in collaboration with G. Bruzzaniti) 7 exercise books in general physics, calculus, algebra.
- G. Bruzzaniti, U. Bruzzo, Finalmente ho capito a cosa serve la matematica, Vallardi 2009.
- I have translated into Italian the articles "String theory" by M. Mariño and "Quantum field theory" by F. Wilczek for publication in "La matematica", Vol. IV, C. Bartocci and P. Odifreddi eds., Einaudi, Torino 2010.
- I have translated into English the book by G. Bruzzaniti, "Enrico Fermi. Il genio obbediente" (Enrico Fermi: the obedient genius. Springer Biographies, Springer, New York 2016).