

## Publications and Preprints – C. CONSANI

1. *Knots, primes and class field theory* (with A. Connes), Preprint (2024).
2. *On  $q$ -series and the moment problem associated to local factors* (with A. Connes and H. Moscovici), <https://arxiv.org/pdf/2403.01247>
3. *Knots, primes and the adèle class space* (with A. Connes), <https://arxiv.org/pdf/2401.08401>
4. *Zeta zeros and prolate wave operators: semilocal adelic operators* (with A. Connes and H. Moscovici), Ann. Funct. Anal. **15** (2024), no. 4, Paper No. 87, 38 pp.  
2025-Best Paper in Annals of Functional Analysis, **Award Winner**.
5. *On the metaphysics of  $\mathbf{F}_1$*  (with A. Connes), Atti Accad. Naz. Lincei Rend. Lincei Mat. Appl. **35** (2024), 121-154
6. *Riemann-Roch for the ring  $\mathbf{Z}$*  (with A. Connes), C. R. Math. Acad. Sci. Paris **362** (2024), 229–235.
7. *Riemann-Roch for  $\overline{\mathrm{Spec} \mathbb{Z}}$*  (with A. Connes), Bulletin des Sciences Mathématiques **187** (2023).
8. *Cyclic theory and the pericyclic category* (with A. Connes), in *Cyclic Cohomology at 40: Achievements and Future Prospects*, 103–122, Proc. Sympos. Pure Math., **105**, Amer. Math. Soc., Providence, RI, 2023.
9. *Hochschild homology, trace map and  $\zeta$ -cycles* (with A. Connes), in *Cyclic Cohomology at 40: Achievements and Future Prospects*, 83–101, Proc. Sympos. Pure Math., **105**, Amer. Math. Soc., Providence, RI, 2023.
10. *BC-system, absolute cyclotomy and the quantized calculus* (with A. Connes), to appear in Enseign. Math. (2024). Special volume for Sullivan’s 80-th Birthday.
11. *Spectral triples and  $\zeta$ -cycles* (with A. Connes), Enseign. Math. **69** (2023), no. 1–2, 93–148. Special volume dedicated to Vaughan Jones.
12. *Quasi-inner functions and local factors* (with A. Connes), J. Number Theory **226** (2021) 139–167.
13. *Weil positivity and Trace formula: the archimedean place* (with A. Connes), Selecta Mathematica (N.S.) **27**, 4, (2021), pp. 1–70.
14. *Segal’s Gamma rings and universal arithmetic* (with A. Connes), The Quarterly Journal of Mathematics, **72**, 1-2, (2021), pp. 1–29.
15. *The Scaling Hamiltonian* (with A. Connes), J. Operator Theory **85** 1 (2021), pp. 257–276.
16. *On Absolute Algebraic Geometry the affine case* (with A. Connes), Advances in Mathematics **390** Paper No. 107909 (2021), 44 pp.
17.  *$\overline{\mathrm{Spec} \mathbb{Z}}$  and the Gromov norm* (with A. Connes), Theory and Applications of Categories, **35**, No. 6, (2020), pp. 155–178.

18. *The Riemann-Roch strategy, Complex lift of the Scaling Site* (with A. Connes), in “Advances in Noncommutative Geometry, On the Occasion of Alain Connes’ 70th Birthday”, Chamseddine, A., Consani, C., Higson, N., Khalkhali, M., Moscovici, H., Yu, G. (Eds.), Springer (2019).
19. *Homological Algebra in Characteristic One* (with A. Connes), Higher Structures Journal **3** (2019), no. 1, 155–247.
20. *Geometry of the Scaling Site* (with A. Connes), Selecta Math. (N.S.) **23** (2017), no. 3, 1803–1850.
21. *The Scaling Site* (with A. Connes), C. R. Math. Acad. Sci. Paris **354** (2016), no. 1, 1–6.
22. *Absolute Algebra and Segal’s  $\Gamma$ -Rings: au Dessous de  $\overline{\text{Spec } \mathbb{Z}}$*  (with A. Connes), J. Number Theory **162** (2016), 518–551.
23. *Geometry of the Arithmetic Site* (with A. Connes), Adv. Math. **291** (2016), 274–329.
24. *The Cyclic and Epicyclic Sites* (with A. Connes), Rend. Semin. Mat. Univ. Padova **134** (2015), 197–237.
25. *The Arithmetic Site* (with A. Connes), C. R. Math. Acad. Sci. Paris **352** (2014), no. 12, 971–975.
26. *Projective Geometry in Characteristic One and the Epicyclic Category* (with A. Connes), Nagoya Math. J. **217** (2015), 95–132.
27. *Cyclic Structures and the Topos of Simplicial Sets* (with A. Connes), J. Pure Appl. Algebra **219** (2015), no. 4, 1211–1235.
28. *Cyclic Homology, Serre’s Local Factors and the  $\lambda$ -Operations* (with A. Connes), J. K-Theory **14** (2014), no. 1, 1–45.
29. *The Universal Thickening of the Field of Real Numbers* (with A. Connes), Advances in the theory of numbers, 11–74, Fields Inst. Commun., **77**, Fields Inst. Res. Math. Sci., Toronto, ON, 2015.
30. *Noncommutative Geometry, Arithmetic, and Related Topics* (Editor with A. Connes), Proceedings of the Twenty-First Meeting of the Japan-U.S. Mathematics Institute, Johns Hopkins University Press (2012). ISBN: 9781421403526
31. *On the Arithmetic of the BC-System* (with A. Connes), J. Noncommutative Geometry **8** (2014), no. 3, 873–945.
32. *Characteristic One, Entropy and the Absolute Point* (with A. Connes), in Noncommutative geometry, arithmetic, and related topics, 75–139, Johns Hopkins Univ. Press, Baltimore, MD, 2011. ISBN: 9781421403526.
33. *The Hyperring of Adèle Classes* (with A. Connes), J. Number Theory **131** (2011), no. 2, 159–194.
34. *Schemes over  $\mathbb{F}_1$  and Zeta Functions* (with A. Connes), Compositio Math. **146** (2010), no. 6, 1383–1415.
35. *From Monoids to Hyperstructures: in Search of an Absolute Arithmetic* (with A. Connes), in Casimir force, Casimir operators and the Riemann hypothesis, 147–198, Walter de Gruyter, Berlin, 2010.

- 36.** *On the Notion of Geometry over  $\mathbb{F}_1$*  (with A. Connes), J. Algebraic Geometry **20** (2011), no. 3, 525–557.
- 37.** *The Weil Proof and the Geometry of the Adèles Class Space* (with A. Connes and M. Marcolli), in Algebra, arithmetic, and geometry: in honor of Yu. I. Manin. Vol. I, 339–405, Progr. Math., **269**, Birkhäuser Boston, Inc., Boston, MA, 2009.
- 38.** *Fun with  $\mathbb{F}_1$*  (with A. Connes and M. Marcolli), J. Number Theory **129** (2009), no. 6, 1532–1561. Selected by Elsevier B.V. as “Article of the Future 2011” in Mathematics & Computer Science.
- 39.** *Noncommutative Geometry and Motives (a quoi Servent les Endomotifs?)*, in Renormalization and Galois theories, 1–37, IRMA Lect. Math. Theor. Phys., **15**, Eur. Math. Soc., Zürich, 2009.
- 40.** *Noncommutative Geometry and Motives: the Thermodynamics of Endomotives* (with A. Connes and M. Marcolli), Adv. Math. **214** (2007), no. 2, 761–831.
- 41.** *Quantum Statistical Mechanics over Function Fields* (with M. Marcolli), J. Number Theory **123** (2007), no. 2, 487–528.
- 42.** *Archimedean Cohomology Revisited* (with M. Marcolli), in Noncommutative geometry and number theory, 109–140, Aspects Math., **E37**, Friedr. Vieweg, Wiesbaden, 2006.
- 43.** *Noncommutative Geometry and Number Theory: Where Arithmetic Meets Geometry and Physics* (Editor with M. Marcolli), Aspects of Mathematics **E37** Vieweg (2006). ISBN 978-3-8348-0352-8
- 44.** *On the Cusp Form Motives in Genus One and Level One* (with C. Faber), in Moduli spaces and arithmetic geometry, 297–314, Adv. Stud. Pure Math., **45**, Math. Soc. Japan, Tokyo, (2006).
- 45.** *Non-commutative Geometry, Dynamics and  $\infty$ -adic Arakelov Geometry* (with M. Marcolli), Selecta Math. (N.S.) **10** (2004), no. 2, 167–251.
- 46.** *New Perspectives in Arakelov Geometry* (with M. Marcolli), in Number theory, 81–102, CRM Proc. Lecture Notes, **36**, Amer. Math. Soc., Providence, RI, 2004. Electronic ISBN: 978-1-4704-3950-7.
- 47.** *Spectral triples from Mumford Curves* (with M. Marcolli), Int. Math. Res. Not. 2003, no. **36**, 1945–1972.
- 48.** *Triplets Spectraux en Géométrie d’Arakelov* (with M. Marcolli), C. R. Math. Acad. Sci. Paris **335** (2002), no. 10, 779–784.
- 49.** *The Picard-Lefschetz Formula and a Conjecture of Kato: the Case of Lefschetz Fibrations* (with M. Kim), Math. Res. Lett. **9** (2002), no. 5–6, 621–631.
- 50.** *Arithmetic on a Quintic Threefold* (with J. Scholten), Internat. J. Math. **12** (2001), no. 8, 943–972.
- 51.** *The Local Monodromy as a Generalized Algebraic Correspondence* (with an appendix by S. Bloch) Doc. Math. **4** (1999), 65–108. ISSN 1431-0643.
- 52.** *Double Complexes and Euler L-Factors*, Compositio Math. **111** (1998), no. 3, 323–358.
- 53.** *Double Complexes and Euler L-Factors on Degenerations of Algebraic Varieties*, Thesis (Ph.D.) The University of Chicago. 1996. 63 pp.

- 54.** *K-Theory of Blow-ups and Vector Bundles on the Cone over a Surface*, K-Theory **7** (1993), no. 3, 269–284.
- 55.** *Intersection Theories and K-Theory on Singular Varieties* (in italian), Ph.D Thesis at The University Turin (and Genoa) (1993).
- 56.** *A Moving-Lemma for a Singular Variety and Applications to the Grothendieck Group  $K_0(X)$* , in Algebraic K-theory, Commutative algebra, and Algebraic geometry (Santa Margherita Ligure, 1989), Contemp. Math., **126**, Amer. Math. Soc., Providence, RI, (1992), 21–45.