

Publications

John Lott

1. “Vacuum Charge and the Eta-Function”, *Comm. Math. Phys.* 93, p. 533-558 (1984)
2. “The Yang-Mills Collective-Coordinate Potential”, *Comm. Math. Phys.* 95, p. 289-300 (1984)
3. “The Eta-Function and Some New Anomalies”, *Phys. Lett. B* 145, p. 179-180 (1984)
4. “Effective Actions and Large-N Limits”, *Comm. Math. Phys.* 100, p. 133-140 (1985)
5. “Degrees of Freedom and Quantization of Anomalous Gauge Theories”, with R. Rajaraman, *Phys. Lett. B* 165, p. 321-326 (1985)
6. “A Proof of the Axial Anomaly”, *Comm. Math. Phys.* 97, p. 371-379 (1985)
7. “Eigenvalue Bounds for the Dirac Operator”, *Pac. J. Math.* 125, p. 117-126 (1986)
8. “Bosonization in Curved Spacetime”, *Phys. Lett. B* 173, p. 319-320 (1986)
9. “Renormalization Group Flow for General σ -Models”, *Comm. Math. Phys.* 107, p. 165-176 (1986)
10. “Supersymmetric Path Integrals”, *Comm. Math. Phys.* 108, p. 605-629 (1986)
11. “Real Anomalies”, *J. Math. Phys.* 29, p. 1455-1464 (1988)
12. “Analytic Torsion for Group Actions”, in *Recent Developments in Geometry (Los Angeles, 1987)*, *Cont. Math.* 101, AMS, Prov, RI, p. 179-189 (1989)
13. “Torsion Constraints in Supergeometry”, *Comm. Math. Phys.* 133, p. 563-615 (1990)
14. “Particle Models and Noncommutative Geometry”, with A. Connes, in *Recent Advances in Field Theory (Annecy-le-Vieux, 1990)*, *Nucl. Phys. B Proc. Suppl.* 18B (1990)

15. “Analytic Torsion for Group Actions”, with M. Rothenberg, *J. of Diff. Geom.* 34, p. 431-481 (1991)
16. “The Metric Aspect of Noncommutative Geometry”, with A. Connes, in *New Symmetry Principles in Quantum Field Theory (Cargèse, 1991)*, NATO Adv. Sci. Inst. Ser. B Phys. 295, Plenum, NY, p. 53-93 (1992)
17. “Superconnections and Higher Index Theory”, *Geom. Funct. Anal.* 2, p. 421-454 (1992)
18. “Heat Kernels on Covering Spaces and Topological Invariants”, *J. Diff. Geom.* 35, p. 471-510 (1992)
19. “Higher Eta-Invariants”, *K-Theory* 6, p. 191-233 (1992)
20. “Heat Kernels on Covering Spaces and Topological Invariants”, in *Proceedings of 1990 Summer Institute on Differential Geometry*, Proc. Symp. Pure Math. 54, Vol. 2, eds. R. Greene and S.T. Yau, Amer. Math. Soc., p. 391-400 (1993)
21. “Fibrés Plats, Images Directes et Formes de Torsion Analytique”, with J.-M. Bismut, *C. R. Acad. Sci. Paris*, t. 316, Série I, p. 477-482 (1993)
22. “Equivariant Analytic Torsion for Compact Lie Group Actions”, *J. of Funct. Anal.* 125, p. 438-451 (1994)
23. “ \mathbb{R}/\mathbb{Z} Index Theory”, *Comm. in Anal. and Geom.* 2, p. 279-311 (1994)
24. “ L^2 -Topological Invariants of 3-Manifolds”, with W. Lück, *Inventiones Math.* 120, p. 15-60 (1995)
25. “Flat Vector Bundles, Direct Images and Higher Real Analytic Torsion”, with J.-M. Bismut, *J. Amer. Math. Soc.* 8, p. 291-363 (1995)
26. “The Zero-in-the-Spectrum Question”, *L’Enseignement Mathématique* 42, p. 341-376 (1996)
27. “ L^2 -Cohomology of Geometrically Infinite Hyperbolic 3-Manifolds”, *Geom. Anal. and*

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28. “Torus Bundles and the Group Cohomology of $SL(N, Z)$ ”, with J.-M. Bismut, J. of Diff. Geom. 47, p. 196-236 (1997)

29. “Eta and Torsion”, in Symétries Quantiques, Proceedings of the 1995 Les Houches Summer School in Theoretical Physics, North Holland, Amsterdam, p. 947-955 (1998)

30. “Remark about Heat Flow on Periodic Spaces”, Proc. of the Amer. Math. Soc. 127, p. 1243-1249 (1999)

31. “Deficiencies of Lattice Subgroups of Lie Groups”, Bull. London Math. Soc. 31, p. 191-195 (1999)

32. “Diffeomorphisms and Noncommutative Analytic Torsion”, Mem. of the Amer. Math. Soc. 141, no. 673, viii + 56 pp. (1999)

33. “Secondary Analytic Indices”, in Regulators in Analysis, Geometry and Number Theory, Birkhäuser Progress in Mathematics Series vol. 171, eds. A. Reznikov and N. Schappacher, Birkhäuser, Boston, p. 231-293 (2000)

34. “Delocalized L^2 -Invariants”, J. of Funct. Anal. 169, p. 1-31 (2000)

35. “Signatures and Higher Signatures of S^1 -Quotients”, Math. Annalen 316, p. 617-657 (2000)

36. “Manifolds with Quadratic Curvature Decay and Slow Volume Growth”, with Z. Shen, Annales Scientifiques de l’École Normale Supérieure (4) 33, p. 275-290 (2000)

37. “Invariant Currents on Limit Sets”, Comm. Math. Helv. 75, p. 319-350 (2000)

38. “ \hat{A} -Genus and Collapsing”, J. of Geom. Anal. 10, p. 529-543 (2000)

39. “On the Homotopy Invariance of Higher Signatures for Manifolds with Boundary”, with E. Leichtnam and P. Piazza, J. of Diff. Geom. 54, p. 561-633 (2000)

40. “The Dirac Operator and Conformal Compactification”, Internat. Math. Res. Notices 2001, No. 4, p. 171-178 (2001)

41. "On the Spectrum of a Finite-Volume Negatively-Curved Manifold", *Amer. J. of Math.* 123, p. 185-205 (2001)
42. "Collapsing and Dirac-Type Operators", *Geom. Ded.* 91, p. 175-196 (2002) (special issue on Partial Differential Equations and their Applications to Geometry and Physics)
43. "Collapsing and the Differential Form Laplacian : The Case of a Smooth Limit Space", *Duke Math. Journal* 114, p. 267-306 (2002)
44. "Higher-Degree Analogs of the Determinant Line Bundle", *Comm. Math. Phys.* 230, p. 41-69 (2002)
45. "Manifolds with Quadratic Curvature Decay and Fast Volume Growth", *Math. Ann.* 325, p. 525-541 (2003)
45. "Local Index Theory over Étale Groupoids", with A. Gorokhovsky, *J. Reine Angew. Math. (Crelle's Journal)* 560, p. 151-198 (2003)
46. "Remark about the Spectrum of the p -Form Laplacian Under a Collapse with Curvature Bounded Below", *Proc. of the AMS* 132, p. 911-918 (2003)
47. "Some Geometric Properties of the Bakry-Émery-Ricci Tensor", *Comm. Math. Helv.* 78, p. 865-883 (2003)
48. "Limit Sets as Examples in Noncommutative Geometry", *K-Theory* 34, p. 283-326 (2005)
49. "Local Index Theory over Foliation Groupoids", with A. Gorokhovsky, *Advances in Mathematics* 204, p. 413-447 (2006)
50. "Weak Curvature Conditions and Functional Inequalities", with C. Villani, *J. of Funct. Analysis* 245, p. 311-333 (2007)
51. "Remark about Scalar Curvature and Riemannian Submersions", *Proc. of the AMS* 135, p. 3375-3381 (2007)
52. "The Work of Grigory Perelman", *Proc. of the 2006 ICM, European Math. Soc.*

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53. “On the Long-Time Behavior of Type-III Ricci Flow Solutions”, *Math. Annalen* 339, p. 627-666 (2007)

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56. “Some Geometric Calculations on Wasserstein Space”, *Comm. Math. Phys.* 277, p. 423-437 (2008)

57. “Ricci Curvature for Metric-Measure Spaces via Optimal Transport”, with C. Villani, to appear, *Ann. Math.*

58. “Notes on Perelman’s Papers”, with Bruce Kleiner, preprint (2006)

59. “Dimensional Reduction and the Long-Time Behavior of Ricci Flow”, preprint (2007)

60. “Optimal Transport and Perelman’s Reduced Volume”, preprint (2008)

Other

61. “The Geometry of Supergravity Torsion Constraints”, prepared for the 2001 Park City Mathematics Institute

62. “Collapsing and the Differential Form Laplacian : The Case of a Singular Limit Space”, preprint