September 28, 2023

## Prépublications

1. B. Colbois, A. Girouard; Metric upper bounds for Steklov and Laplace eigenvalues; arXiv:2108.03101 ; submitted

## Publications dans des revues avec referees

2. B. Colbois, C. Léna, L. Provenzano, A. Savo; Geometric bounds for the magnetic Neumann eigenvalues in the plane; to appear at Journal de Mathématiques Pures et Appliquées; arXiv:2305.02686

3. B. Colbois, A. Girouard, C. Gordon, D. Sher; Some recent developments on the Steklov eigenvalue problem (Survey article); to appear at Revista Matemática Complutense; published online

   https://link.springer.com/article/10.1007/s13163-023-00480-3

4. B. Colbois, L. Provenzano, A. Savo; Isoperimetric inequalities for the first Aharonov-Bohm eigenvalue of the Neumann and Steklov problems; J. of Geometric Analysis 32:285 (2022).

5. B. Colbois, A. El Soufi, S. Ilias, A. Savo; Eigenvalues upper bounds for the magnetic Schrödinger operator, Communications in Analysis and Geometry, Vol. 30, No. 4 (2022), pp. 779-814.

6. B. Colbois, L. Provenzano; Neumann eigenvalues of the biharmonic operator on domains: geometric bounds and related results; J. of Geometric Analysis 32 N. 8, Article number: 218 (2022);

7. B. Colbois, L. Provenzano; Conformal upper bounds for the eigenvalues of the p-Laplacian; Journal of the London Mathematical Society 104 N. 5 (2021) 2128-2147.

8. B. Colbois, K. Gittins; Upper bounds for Steklov eigenvalues of submanifolds in Euclidean space via the intersection index; Differential Geom. Appl. 78 (2021), Paper No. 101777, 21 pp

9. B. Colbois, S. Verma; Sharp Steklov upper bound for submanifolds of revolution; J. of Geometric Analysis; Vol. 31, n.11 (2021) 11214-11225.

10. B. Colbois, A. Savo; Lower bounds for the first eigenvalue of the Laplacian with zero magnetic field in planar domains; Journal of Functional Analysis 60, (2021) 1-33.

11. B. Colbois, A. Savo; Upper bounds for the ground state energy of the Laplacian with zero magnetic field on planar domains; Annals of Global Analysis and Geometry; Vol 6 (2021) n.1 1-18.

12. B. Colbois, A. Girouard, A. Hassannezhad; The Steklov and Laplacian spectra of Riemannian manifolds with boundary; Journal of Functional Analysis 278 (6):108409, (2020).

13. B. Colbois, A. Girouard, A. Métras; Hypersurfaces with small Steklov eigenvalues, Canadian Mathematical Bulletin 63 (1) (2020) 46-57.

14. B. Colbois, A. El Soufi, A. Girouard; Compact manifolds with fixed boundary and large Steklov eigenvalues, Proc. Amer. Math. Soc., Vol 147, N.9 (2019) 3813-3827.

15. B. Colbois, A. Girouard, K. Gittins; Steklov eigenvalues of submanifolds with prescribed boundary in Euclidean space, J. of Geometric Analysis, Vol 25, n. 2 (2019) 1811-1834.

16. B. Colbois, A. El Soufi; Spectrum of the Laplacian with weights, Annals Global Analysis and Geometry, Vol 55 (2019) no.2, 149-180.

17. B. Colbois, A. Girouard, B. Raveendran; The Steklov spectrum and coarse discretizations of manifolds with boundary, Pure and Applied Mathematics Quarterly, Volume 14, Number 2, 357-392, (2018).

18. B. Colbois, A. Savo; Lower bounds for the first eigenvalue of the magnetic Laplacian, J. Funct. Anal. 274 (2018), no. 10, 2818-2845.

19. B. Colbois, L. Provenzano; Eigenvalues of elliptic operators with density, Calc. Var. Partial Differential Equations 57 (2018), no. 2, 57:36.

20. B. Colbois, A. El Soufi, A. Savo; Eigenvalues of the Laplacian on a compact manifold with density, Communications in Analysis and Geometry, Vol.23, N. 3 (2015) 639-670.

21. B. Colbois, A. El Soufi; Extremal eigenvalues of the Laplacian on Euclidean domains and closed surfaces, Math. Zeitschrift, Volume 278, Issue 1-2 (2014) 529-546.

22. B. Colbois, P. Verovic; Two properties of volume growth entropy in Hilbert geometry, Geometriae Dedicata, Volume 173, Issue 1 (2014), 163-175.

23. T. Barthelmé, B. Colbois, M. Crampon, P. Verovic; Laplacian and spectral gap in regular Hilbert geometries, Tohoku Math. J. 66 (2014) 377-407.

24. B. Colbois, A. Girouard; The spectral gap of graphs and Steklov eigenvalues on surfaces, Electronic Research Announcements in Mathematical Sciences, vol.21 (2014) 19-27.

25. B. Colbois, A. Girouard, M. Iversen; Uniform stability of the Dirichlet spectrum for rough outer perturbations, Journal of Spectral Theory, vol 3, N.4 (2013) 575-599.

26. B. Colbois, A. El Soufi, A. Girouard, Isoperimetric control of the spectrum of a compact hypersurface, J. Reine Angew. Math. 683 (2013) 49-66.

27. T. Barthelmé, B.Colbois; Eigenvalue control for a Finsler–Laplace operator, Ann. Global Anal. Geom. 44 (2013), no. 1, 43-72.

28. B. Colbois, A. Savo, Involutive isometries, eigenvalue bounds and a spectral property of Clifford tori, Indiana University Mathematics Journal 61, 1 (2012) 337-357.

29. B. Colbois, A. Savo; Large eigenvalues and concentration, Pacific Journal of Mathematics, Vol. 249 (2011), No. 2, 271-290.

30. B. Colbois, A. El Soufi, A. Girouard, Isoperimetric control of the Steklov spectrum, J. Functional Analysis, Vol. 261, Issue 5 (2011) 1384-1399.

31. B. Colbois, P. Verovic; Hilbert domains that admit a quasi-isometric embedding into Euclidean space, Advances in Geometry, Volume 11, Issue 3, (2011) 465-470

32. B. Colbois, C. Vernicos, P. Verovic; Hilbert geometry for convex polygonal domains, Journal of Geometry, Vol.100, 1-2, (2011) 37-64.

33. B. Colbois, E. Dryden, A. El Soufi; Bounding the eigenvalues of the Laplace-Beltrami operator on compact submanifolds, Bull. London Math. Soc. Vol. 42 ,N.1 (2010) 96-108.

34. B. Colbois, D. Maerten, Eigenvalue estimate for the rough Laplacian on differential forms, Manuscripta Mathematica 132, (2010) 399-413

35. E. Aubry, J. Bertrand, B. Colbois: Eigenvalues pinching on convex domains in space forms, Trans. Amer. Math. Soc. 361 (2009) 1-18.

36. B. Colbois, F. Newberger, P. Verovic, Some Finsler deformations of hyperbolic surfaces, Annals of Global Analysis and Geometry, Vol.35, N.2 (2009) 191-226.

37. B. Colbois, E. Dryden, A. El Soufi: Extremal G-invariant eigenvalues of the Laplacian of G-invariant metrics, Mathematische Zeitschrift, Volume 258, Number 1 (2008) 29-41.

38. B. Colbois, D. Maerten; Eigenvalues estimate for the Neumann problem of a bounded domain, J. Geom. Analysis 18 N.4 (2008) 1022-1032.

39. B. Colbois, C. Vernicos, P. Verovic: Area of ideal triangles and Gromov-hyperbolicity in Hilbert Geometry, Illinois Journal of Mathematics 52, N.1,(2008) 319-343.

40. B. Colbois, J-F. Grosjean ; A pinching theorem for the first eigenvalue of the Laplacian on hypersurfaces of the euclidean space, Commentarii Math. Helv. Volume 82, Issue 1 (2007) 175-195.

41. B. Colbois, C. Vernicos : Les géométries de Hilbert sont à géométrie locale bornée, Annales Inst. Fourier, Vol. 57 no. 4 (2007), 1359-1375.

42. B. Colbois, C. Vernicos ; Bas du spectre et delta-hyperbolicité en géométrie de Hilbert plane, Bulletin de la Société mathématique de France 134, fascicule 3 (2006), 357-381.

43. J. Bertrand, B. Colbois ; Capacité et inégalité de Faber-Krahn dans $R^n$, Journal of Functional Analysis, Vol. 232, Issue 1 (2006) 1-28.

44. B. Colbois, A. El Soufi, Eigenvalues of the Laplacian acting on p-forms and metric conformal deformations, Proc. Amer. Math. Soc. 134 (2006), 715-721.

45. B. Colbois, C. Vernicos, P. Verovic, L'aire des triangles idéaux en géométrie de Hilbert, L'Enseignement des Mathématiques t. 50 (2004) 203-237.

46. B. Colbois, P. Verovic, Hilbert Geometry for strictly convex domains, Geometriae Dedicata 105 (2004) 29-42.

47. B. Colbois, Une inégalité du type Payne-Polya-Weinberger pour le laplacien brut, Proceeding of the AMS 131 (2003) 3937-3944.

48. B. Colbois, A. El Soufi, Extremal eigenvalues in a conformal class of metrics : the conformal spectrum, Annals of Global Analysis and Geometry 24 (2003) 337-349.

49. E. Aubry, B. Colbois, P. Ghanaat, E. A. Ruh ; Curvature, Harnack inequality, and a spectral characterization of Nilmanifolds, Annals of Global Analysis and Geometry 23 (2003) 227-246.

50. B. Colbois, A-M. Matei : Asymptotic estimate of the first eigenvalue of the p-Laplacian, Advanced Nonlinear Studies 3 (2003) 207-217.

51. B. Colbois, A-M. Matei, On the optimality of J. Cheeger and P. Buser inequalities, Differential Geometry and its Applications 19 (2003) 281-293.

52. B. Colbois, P. Verovic : A rigidity result for Hilbert geometries , Bull. of the Australian Math. Soc 65, No.1 (2002), 23-34.

53. B. Colbois, G. Courtois, Petites valeurs propres des p-formes différentielles et classe d'Euler des $S^1$-fibrés, Ann. Scient. Ec. Norm. Sup. 4ième série, T.33, (2000), 611-645.

54. G. Besson, B. Colbois, G. Courtois : Sur la multiplicité de la première valeur propre de l'opérateur de Schrödinger avec champ magnétique sur la sphère $S^2$. Transaction of the AMS 350 N.1, (1998), 331-345.

55. B. Colbois, Metrische Geometrie, El. Mathematik 51 (1996) 133-144.

56. C. Anné, B. Colbois : Spectre du laplacien sur les p-formes différentielles et écrasement d'anses, Math.Ann. 303, (1995) 545-573.

57. B. Colbois, J. Dodziuk : Riemannian Metric with large $\lambda_1$, Proc.of the AMS Vol 112 N.3 (1994) 905-906.

58. P. Buser, B. Colbois, J. Dodziuk : Small eigenvalues of the Laplacian on negatively curved manifolds, Proc. of Symp. in Pure Mathematics, Vol. 54 (1993), Part 3, 95-98.

59. C. Anné, B. Colbois : Opérateur de Hodge-Laplace sur des variétés compactes privées d'un nombre fini de boules. Journal of Functional Analysis, Vol 115, Number 1, (1993), 190-212.

60. P. Buser, B. Colbois, J. Dodziuk : Small eigenvalues and tubes on negatively curved manifolds. The Journal of Geometric Analysis, Vol. 3, N.1, (1993) 1-26 .

61. B. Colbois, G. Courtois : Convergence de variétés et convergence du spectre du Laplacien. Ann. Scient. Ec. Norm. Sup., 4ème série, t. 24, (1991) 507-518.

62. B. Colbois , G. Courtois : A note on the first nonzero eigenvalue of the Laplacian acting on p-forms. Manuscripta Mathematica 68, (1990) 143-160.

63. B. Colbois, G. Courtois : Les valeurs propres inférieures à $1/4$ des surfaces de Riemann de petit rayon d'injectivité. Comment. Math. Helv. 64, (1989) 349-362.

64. B. Colbois, Y. Colin de Verdière : Sur la multiplicité de la première valeur propre d'une surface de Riemann à courbure constante. Comment. Math. Helv. 63 , (1988) 194-208.

65. B. Colbois : Petites valeurs propres du laplacien sur une surface de Riemann compacte et graphes. C.R. Acad. Sc. Paris, t. 301, série I, no 20, (1985) 927-930.

66. M. Burger, B. Colbois : A propos de la multiplicité de la première valeur propre du laplacien d'une surface de Riemann. C.R. Acad. Sc. Paris, t. 300, série I, no 8,(1985) 247-249.

**Thèse de doctorat**

67. B. Colbois : Sur la multiplicité de la première valeur propre non nulle du laplacien des surfaces à courbure -1. Lausanne, 1987.

**Compte-rendus de conférences, articles d'exposition**

68. B. Colbois, The spectrum of the Laplacian: A geometric approach, in Geometric and Computational Spectral Theory, Contemp. Math. 700, (2017) p. 1-40.

69. B. Colbois, Laplacian on Riemannian manifolds, notes of a serie of 4 lectures given in Carthage, May 21-22, 2010.

70. B. Colbois, Spectral theory and geometry, notes of a serie of 4 lectures given in Teheran, May 21-June 2, 2006.

71. B. Colbois, Spectre conforme et métriques extrémales, Séminaire de théorie spectrale et géométrie 2003/04 , Grenoble.

72. B. Colbois, P. Ghanaat, E. Ruh : Curvature and a spectral characterization of nilmanifolds, Forschungsinstitut fuer Mathematik, ETHZ, Preb. (2000).

73. B. Colbois, Une caractérisation spectrale des nilvariétés, Séminaire de théorie spectrale et géométrie 1999/2000, Grenoble.

74. B. Colbois, P. Ghanaat, E. Ruh : Curvature and Gradient Estimates for Eigenforms of the Laplacian (1999).

75. B. Colbois, Le spectre du laplacien agissant sur les p-formes différentielles, Séminaire de théorie spectrale et géométrie 1995/96 , Grenoble

76. B. Colbois : Introduction au laplacien. Rencontre de théorie spectrale et géométrie, Grenoble (1991).

77. B. Colbois : Small eigenvalues of the Laplacian on negatively curved manifolds, Bonn, séminaire d'analyse (1990-91).

78. B. Colbois, G. Courtois : Les petites valeurs propres des variétés hyperboliques de dimension 3, Prépublication de l'Institut Fourier, Grenoble (1989).