Bibliography

1. **Adams R.**, "Sobolev spaces", Academic Press, 1975.
2. **Alexopoulos G.K.**, A lower estimate for central probabilities on polycyclic groups, *Can. J. Math.*, **44** (1992) no.5, 897-910.
3. **Alexopoulos G.K.**, An application of Homogenization theory to Harmonic analysis on solvable Lie groups of polynomial growth, *Pacific J. Math.*, **159** (1993) 19-45.
4. **Ancona A.**, Negatively curved manifolds,elliptic operators and the Martin boundary, *Ann. of Math.*, **125** (1987) 495-536.
5. **Ancona A.**, Théorie du potentiel sur des graphes et des variétés, *in:* "Cours de l'Ecole d'été de probabilités de Saint-Flour, 1988", Lecture Notes Math. 1427, Springer, 1990. 4-112.
6. **Anderson M.T., Schoen R.**, Positive harmonic function on the complete manifolds of negative curvature, *Ann. of Math.*, **121** (1983) 429-461.
7. **Anker J-Ph., Ji L.**, Heat kernel and Green function estimates on non-compact symmetric spaces, Geom. Funct. Anal., **9** (1999) 1035-1091.
8. **Anker J-Ph., Ostellari P.**, The heat kernel on noncompact symmetric spaces, *in:* "Lie groups and symmetric spaces", Amer. Math. Soc. Transl. Ser. 2, 210, (2003) 27–46.
9. **Aronson D.G.**, Bounds for the fundamental solution of a parabolic equation, *Bull. Amer. Math. Soc.*, **73** (1967) 890-896.
10. **Aronson D.G.**, Non-negative solutions of linear parabolic equations, *Ann. Scuola Norm. Sup. Pisa. Cl. Sci. (4)*, **22** (1968) 607-694. Addendum **25** (1971) 221-228.
11. **Ashbaugh M. S.**, Isoperimetric and universal inequalities for eigenvalues, *in:* "Spectral theory and geometry (Edinburgh, 1998)", 95–139. London Math. Soc. Lecture Note Ser. 273, Cambridge Univ. Press, Cambridge, 1999.
12. **Atiyah M., Bott R., Patodi V. K.**, On the heat equation and the index theorem, *Invent. Math.*, **19** (1973) 279–330. Errata *Invent. Math.*, **28** (1975) 277–280.
13. **Auscher P., Coulhon T.**, Gaussian lower bounds for random walks from elliptic regularity, *Ann. Inst. Henri Poincaré - Probabilités et Statistiques*, **35** (1999) no.5, 605-630.
14. **Auscher P., Coulhon T., Grigor'yan A., ed.**, "Heat kernels and analysis on manifolds, graphs, and metric spaces", Contemporary Mathematics 338, AMS, 2003.
15. **Auscher P., Hofmann S., Lacey M., McIntosh A., Tchamitchian Ph.**, The solution of the Kato square root problem for second order elliptic operators on $\mathbb{R}^n$, *Ann. of Math.*, **156** (2002) no.2, 633–654.
16. **Azencott R.**, Behavior of diffusion semi-groups at infinity, *Bull. Soc. Math. (France)*, **102** (1974) 193-240.
17. **Bakry D., Coulhon T., Ledoux M., Saloff-Coste L.**, Sobolev inequalities in disguise, *Indiana Univ. Math. J.*, **124** (1995) no.4, 1033-1074.
18. **Bakry D., Qian Z. M.**, Harnack inequalities on a manifold with positive or negative Ricci curvature, *Revista Matemática Iberoamericana*, **15** (1999) no.1, 143–179.
19. **Barbatis G., Davies E.B.**, Sharp bounds on heat kernels of higher order uniformly elliptic operators, *J. Operator Theory*, **36** (1996) 179–198.

20. **Barbatis G., Filippas S., Tertikas A.**, Series expansion for L^p Hardy inequalities, *Indiana Univ. Math. J.*, **52** (2003) 171-190.
21. **Barbatis G., Filippas S., Tertikas A.**, Critical heat kernel estimates for Schrödinger operators via Hardy-Sobolev inequalities, *J. Funct. Anal.*, **208** (2004) 1-30.
22. **Barlow M.T.**, Diffusions on fractals, *in:* "Lectures on Probability Theory and Statistics, Ecole d'été de Probabilités de Saint-Flour XXV - 1995", Lecture Notes Math. 1690, Springer, 1998. 1-121.
23. **Barlow M.T.**, Heat kernels and sets with fractal structure, *in:* "Heat kernels and analysis on manifolds, graphs, and metric spaces", *Contemporary Mathematics*, **338** (2003) 11-40.
24. **Barlow M.T., Bass R.F.**, Stability of parabolic Harnack inequalites, to appear in *Trans. Amer. Math. Soc.*
25. **Barlow M.T., Coulhon T., Grigor'yan A.**, Manifolds and graphs with slow heat kernel decay, *Invent. Math.*, **144** (2001) 609-649.
26. **Barlow M.T., Coulhon T., Kumagai T.**, Characterization of sub-Gaussian heat kernel estimates on strongly recurrent graphs, *Comm. Pure Appl. Math.*, **58** (2005) no.12, 1642–1677.
27. **Barlow M.T., Grigor'yan A., Kumagai T.**, Heat kernel upper bounds for jump processes and the first exit time, *J. Reine Angew. Math.*, **626** (2008) 135-157.
28. **Batty C.J.K.**, Asymptotic stability of Schrödinger semigroups: path integral methods, *Math. Ann.*, **292** (1992) no.3, 457-492.
29. **Beltrami E.**, Delle variabili complesse sopra una superficie qualunque, *Ann. Mat. Pura Appl. (2)*, **1** (1867) 329-366.
30. **Ben Arous G., Gradinaru M.**, Singularities of hypoelliptic Green functions, *Potential Analysis*, **8** (1998) 217-258.
31. **Ben Arous G., Léandre R.**, Décroissance exponentielle du noyau de la chaleur sur la diagonale 1,2, *Prob. Th. Rel. Fields*, **90** (1991) 175-202 and 377-402.
32. **Bendikov A.**, "Potential theory on infinite-dimensional Ablelian groups", de Gruyter Studies in Mathematics 21, De Gruyter, 1995.
33. **Bendikov A., Saloff-Coste L.**, Elliptic diffusions on infinite products, *J. Reine Angew. Math.*, **493** (1997) 171–220.
34. **Bendikov A., Saloff-Coste L.**, On- and off-diagonal heat kernel behaviors on certain infinite dimensional local Dirichlet spaces, *Amer. J. Math.*, **122** (2000) 1205–1263.
35. **Benjamini I., Chavel I., Feldman E.A.**, Heat kernel lower bounds on Riemannian manifolds using the old ideas of Nash, *Proceedings of London Math. Soc.*, **72** (1996) 215-240.
36. **Berger M., Gauduchon P., Mazet E.**, Le spectre d'une variété riemanniennes, Lecture Notes Math. 194, Springer, 1971.
37. **Berline N., Getzler E., Vergne M.**, Heat kernels and Dirac operators, Grundlehren der mathematischen Wissenschaften 298, Springer, 1992.
38. **Bers L., John F., Schechter M.**, "Partial differential equations", John Wiley & Sons (Interscience), 1964.
39. **Beurling A., Deny J.**, Dirichlet spaces, *Proc. Nat. Acad. Sci. USA*, **45** (1959) 208-215.
40. **Biroli M., Mosco U.**, Sobolev and isoperimetric inequalities for Dirichlet forms on homogeneous spaces, *Rend. Mat. Acc. Lincei, s.9*, **6** (1995) 37-44.
41. **Blumental R.M., Getoor R.K.**, "Markov processes and potential theory", Academic Press, New York, 1968.
42. **Bobkov S.G., Houdré C.**, Some connections between isoperimetric and Sobolev-type inequalities, *Mem. Amer. Math. Soc.*, **129** (1997) no. 616, viii+111pp.

43. **Bobkov S.G., Ledoux M.**, Poincaré's nequalities and Talagrand's concentration phenomenon for the exponential distribution, *Probab. Theory Relat. Fields*, **107** (1997) no.3, 383-400.
44. **Bombieri E., de Giorgi E., Miranda M.**, Una maggiorazioni a-priori relative alle ipersuperfici minimali non parametriche, *Arch. Rat. Mech. Anal.*, **32** (1969) 255-367.
45. **Boothby W. M.**, "An introduction to differentiable manifolds and Riemannian geometry", Pure and Applied Mathematics 120, Academic Press, 1986.
46. **Boukricha A.**, Das Picard-Prinzip und verwandte Fragen bei Störung von harmonischen Räumen, *Math. Ann.*, **239** (1979) 247-270.
47. **Brooks R.**, A relation between growth and the spectrum of the Laplacian, *Math. Z.*, **178** (1981) 501-508.
48. **Buser P.**, A note on the isoperimetric constant, *Ann. Sci. Ecole Norm. Sup.*, **15** (1982) 213-230.
49. **Carlen E.A., Kusuoka S., Stroock D.W.**, Upper bounds for symmetric Markov transition functions, *Ann. Inst. H. Poincaré Probab. Statist.*, **23** (1987) no.2, suppl. 245-287.
50. **Carron G.**, Inégalités isopérimétriques de Faber-Krahn et conséquences, *in:* "Actes de la table ronde de géométrie différentielle (Luminy, 1992)", Collection SMF Séminaires et Congrès 1, 1996. 205–232.
51. **Chavel I.**, "Eigenvalues in Riemannian geometry", Academic Press, New York, 1984.
52. **Chavel I.**, "Riemannian geometry : a modern introduction", Cambridge Tracts in Mathematics 108, Cambridge University Press, 1993.
53. **Chavel I.**, "Isoperimetric inequalities: differential geometric and analytic perspectives", Cambridge Tracts in Mathematics 145, Cambridge University Press, 2001.
54. **Chavel I., Feldman E.A.**, Isoperimetric constants, the geometry of ends, and large time heat diffusion in Riemannian manifolds, *Proc London Math. Soc.*, **62** (1991) 427-448.
55. **Chavel I., Feldman E.A.**, Modified isoperimetric constants, and large time heat diffusion in Riemannian manifolds, *Duke Math. J.*, **64** (1991) no.3, 473-499.
56. **Cheeger J.**, A lower bound for the smallest eigenvalue of the Laplacian, *in:* "Problems in Analysis: A Symposium in honor of Salomon Bochner", Princeton University Press. Princeton, 1970, 195-199.
57. **Cheeger J., Gromov M., Taylor M.**, Finite propagation speed, kernel estimates for functions of the Laplace operator, and the geometry of complete Riemannian manifolds, *J. Diff. Geom.*, **17** (1982) 15-53.
58. **Cheeger J., Yau S.-T.**, A lower bound for the heat kernel, *Comm. Pure Appl. Math.*, **34** (1981) 465-480.
59. **Cheng S.Y, Li P.**, Heat kernel estimates and lower bounds of eigenvalues, *Comment. Mat. Helv.*, **56** (1981) 327-338.
60. **Cheng S.Y.**, Eigenvalue comparison theorem and its geometric application, *Math. Z.*, **143** (1975) 289-297.
61. **Cheng S.Y., Li P., Yau S.-T.**, On the upper estimate of the heat kernel of a complete Riemannian manifold, *Amer. J. Math.*, **103** (1981) no.5, 1021-1063.
62. **Cheng S.Y., Yau S.-T.**, Differential equations on Riemannian manifolds and their geometric applications, *Comm. Pure Appl. Math.*, **28** (1975) 333-354.
63. **Chernoff P.R.**, Essential self-adjointness of powers of generators of hyperbolic equations, *J. Funct. Anal.*, **12** (1973) 401–414.
64. **Chung F.R.K.**, "Spectral Graph Theory", CBMS Regional Conference Series in Mathematics 92, AMS publications, 1996.
65. **Chung F.R.K., Grigor'yan A., Yau S.-T.**, Upper bounds for eigenvalues of the discrete and continuous Laplace operators, *Advances in Math.*, **117** (1996) 165-178.

66. **Chung F.R.K., Grigor'yan A., Yau S.-T.**, Eigenvalues and diameters for manifolds and graphs, *in:* "Tsing Hua Lectures on Geometry and Analysis", Ed. S.-T.Yau, International Press, 1997. 79-105.
67. **Chung F.R.K., Grigor'yan A., Yau S.-T.**, Higher eigenvalues and isoperimetric inequalities on Riemannian manifolds and graphs, *Comm. Anal. Geom*, **8** (2000) no.5, 969-1026.
68. **Chung F.R.K., Yau S.-T.**, Eigenvalue inequalities for graphs and convex subgraphs, *Comm. in Analysis and Geom.*, **2** (1994) 628-639.
69. **Chung F.R.K., Yau S.-T.**, A Harnack inequality for Dirichlet eigenvalues, *J. Graph Theory*, **34** (2000) no.4, 247–257.
70. **Chung F.R.K., Yau, S.-T.**, Eigenvalues of graphs and Sobolev inequalities, *Combinatorics, Probability and Computing*, **4** (1995) 11-26.
71. **Chung K.L., Zhao Z.**, "From Brownian motion to Schrödinger's equation", A series of Comprehensive studies in Mathematics 312, Springer, 1985.
72. **Chung L.O.**, Existence of harmonic L^1 functions in complete Riemannian manifolds, *Proc. Amer. Math. Soc.*, **88** (1983) 531-532.
73. **Conway J.**, "A course in functional analysis", Graduate Texts in Mathematics 96, Springer-Verlag, New York, 1990.
74. **Coulhon T.**, Noyau de la chaleur et discrétisation d'une variété riemannienne, *Israël J. Math.*, **80** (1992) 289-300.
75. **Coulhon T.**, Iteration de Moser et estimation Gaussienne du noyau de la chaleur, *J. Operator Theory*, **29** (1993) 157-165.
76. **Coulhon T.**, Dimensions at infinity for Riemannian manifolds, *Potential Anal.*, **4** (1995) no.5, 335-344.
77. **Coulhon T.**, Ultracontractivity and Nash type inequalities, *J. Funct. Anal.*, **141** (1996) no.2, 510-539.
78. **Coulhon T.**, Off-diagonal heat kernel lower bounds without Poincaré, *J. London Math. Soc.*, **68** (2003) no.3, 795–816.
79. **Coulhon T., Grigor'yan A.**, Heat kernel, volume growth and anti-isoperimetric inequalities, *C.R. Acad. Sci. Paris, Sér. I Math.*, **322** (1996) 1027-1032.
80. **Coulhon T., Grigor'yan A.**, On-diagonal lower bounds for heat kernels on non-compact manifolds and Markov chains, *Duke Math. J.*, **89** (1997) no.1, 133-199.
81. **Coulhon T., Grigor'yan A.**, Random walks on graphs with regular volume growth, *Geom. Funct. Anal.*, **8** (1998) 656-701.
82. **Coulhon T., Grigor'yan A.**, Pointwise estimates for transition probabilities of random walks on infinite graphs, *in:* "Fractals in Graz 2001", Ed. P.Grabner, W.Woess, Trends in Mathematics, Birkäuser, 2003. 119-134.
83. **Coulhon T., Grigor'yan A., Levin D.**, On isoperimetric profiles of product spaces, *Comm. Anal. Geom.*, **11** (2003) no.1, 85-120.
84. **Coulhon T., Grigor'yan A., Pittet Ch.**, A geometric approach to on-diagonal heat kernel lower bounds on groups, *Ann. Inst. Fourier, Grenoble*, **51** (2001) no.6, 1763-1827.
85. **Coulhon T., Grigor'yan A., Zucca, F**, The discrete integral maximum principle and its applications, *Tohoku Math. J.*, **57** (2005) no.4, 559-587.
86. **Coulhon T., Saloff-Coste L.**, Isopérimétrie pour les groupes et les variétés, *Revista Matemática Iberoamericana*, **9** (1993) no.2, 293-314.
87. **Coulhon T., Sikora A.**, Gaussian heat kernel upper bounds via Phragmén-Lindelöf theorem, *Proc. Lond. Math. Soc.*, **96** (2008) no.2, 507–544.
88. **Courant R., Hilbert D.**, "Methods of Mathematical Physics, Vol. 1", Interscience Publishers, 1953.
89. **Courant R., Hilbert D.**, "Methods of Mathematical Physics, Vol. 1I: Partial differential equations", Interscience Publishers, 1962.

90. **Cranston M.**, A probabilistic approach to Martin boundaries for manifolds with end, *Prob. Theory and Related Fields*, **96** (1993) 319–334.
91. **Cranston M., Greven A.**, Coupling and harmonic functions in the case of continuous time Markov processes, *Stochastic Processes and their Applications*, **60** (1995) no.2, 261-286.
92. **Davies E.B.**, "One-parameter semigroups", Academic Press, 1980.
93. **Davies E.B.**, L^1 properties of second order elliptic operators, *Bull. London Math. Soc.*, **17** (1985) no.5, 417-436.
94. **Davies E.B.**, Explicit constants for Gaussian upper bounds on heat kernels, *Amer. J. Math.*, **109** (1987) 319-334.
95. **Davies E.B.**, Gaussian upper bounds for the heat kernel of some second-order operators on Riemannian manifolds, *J. Funct. Anal.*, **80** (1988) 16-32.
96. **Davies E.B.**, "Heat kernels and spectral theory", Cambridge University Press, 1989.
97. **Davies E.B.**, Heat kernel bounds, conservation of probability and the Feller property, *J. d'Analyse Math.*, **58** (1992) 99-119.
98. **Davies E.B.**, The state of art for heat kernel bounds on negatively curved manifolds, *Bull. London Math. Soc.*, **25** (1993) 289-292.
99. **Davies E.B.**, Large deviations for heat kernels on graphs, *J. London Math. Soc. (2)*, **47** (1993) 65-72.
100. **Davies E.B.**, L^p spectral theory of higher-order elliptic differential operators, *Bull. London Math. Soc.*, **29** (1997) 513-546.
101. **Davies E.B.**, Non-Gaussian aspects of heat kernel behaviour, *J. London Math. Soc.*, **55** (1997) no.1, 105-125.
102. **Davies E.B., Mandouvalos N.**, Heat kernel bounds on hyperbolic space and Kleinian groups, *Proc. London Math. Soc.(3)*, **52** (1988) no.1, 182-208.
103. **De Giorgi E.**, Sulla differenziabilita e l'analiticita delle estremali degli integrali multipli regolari, *Mem. Accad. Sci. Torino Cl. Sci. Fis. Mat. Nat., ser.3*, **3** (1957) 25-43.
104. **Debiard A., Gaveau B., Mazet E.**, Théorèmes de comparison in gèomètrie riemannienne, *Publ. Kyoto Univ.*, **12** (1976) 391-425.
105. **Dekkers S.A.J.**, Finite propagation speed for solutions of the parabolic $p-$Laplace equation on manifolds, *Comm. Anal. Geom.*, **14** (2005) no.4, 741-768.
106. **Deny J.**, Les potentiels d'energie finite, *Acta Math.*, **82** (1950) 107-183.
107. **DiBenedetto E.**, "Degenerate parabolic equations", Universitext, Springer, 1993.
108. **Dodziuk J.**, Maximum principle for parabolic inequalities and the heat flow on open manifolds, *Indiana Univ. Math. J.*, **32** (1983) no.5, 703-716.
109. **Donnelly H.**, Bounded harmonic functions and positive Ricci curvature, *Math. Z.*, **191** (1986) 559-565.
110. **Doyle P.G.**, On deciding whether a surface is parabolic or hyperbolic, *Contemporary Mathematics*, **73** (1988) 41-49.
111. **Doyle P.G., Snell J.L.**, "Random walks and electric networks", Carus Mathematical Monographs 22, Mathematical Association of America, Washington, DC, 1984.
112. **Driver B.K.**, Heat kernels measures and infinite dimensional analysis, *in:* "Heat kernels and analysis on manifolds, graphs, and metric spaces", *Contemporary Mathematics*, **338** (2003) 101-142.
113. **Driver B.K., Gordina M.**, Heat kernel analysis on infinite-dimensional Heisenberg groups, *J. Funct. Anal.*, **255** (2008) no.9, 2395–2461.
114. **Driver B.K., Melcher T.**, Hypoelliptic heat kernel inequalities on the Heisenberg group, *J. Funct. Anal.*, **221** (2005) no.2, 340–365.
115. **Dynkin E.B.**, "Markov processes", Springer, 1965.

116. **Ecker K., Huisken G.**, Mean curvature evolution of entire graphs, *Ann. Math.*, **130** (1989) no.3, 453–471.
117. **Escauriaza L.**, Bounds for the fundamental solution of elliptic and parabolic equations in nondivergence form, *Comm. Partial Differential Equations*, **25** (2000) 821-845.
118. **Evans L.C.**, "Partial differential equations", Graduate Studies in Mathematics 19, AMS, 1997.
119. **Evans S.N.**, Multiple points in the sample paths of a Lévy process, *Probab. Th. Rel. Fields*, **76** (1987) 359-367.
120. **Fabes E.B., Stroock D.W.**, A new proof of Moser's parabolic Harnack inequality via the old ideas of Nash, *Arch. Rat. Mech. Anal.*, **96** (1986) 327-338.
121. **Friedman A.**, "Partial differential equations", Holt, Rinehart, and Winston, 1969.
122. **Friedrichs K.O.**, The identity of weak and strong extensions of differential operators, *Trans. AMS*, **55** (1944) 132-151.
123. **Friedrichs K.O.**, On the differentiability of the solutions of linear elliptic differential equations, *Comm. Pure Appl. Math*, **6** (1953) 299-326.
124. **Fukushima M., Oshima Y., Takeda M.**, "Dirichlet forms and symmetric Markov processes", Studies in Mathematics 19, De Gruyter, 1994.
125. **Fukushima M., Uemura T.**, Capacitary bounds of measures and ultracontractivity of time changed processes, *J. Math. Pures Appl. (9)*, **82** (2003) no.5, 553–572.
126. **Gaffney M.P.**, A special Stokes theorem for complete Riemannian manifolds, *Annals of Math.*, **60** (1954) 140-145.
127. **Gaffney M.P.**, The conservation property of the heat equation on Riemannian manifolds, *Comm. Pure Appl. Math.*, **12** (1959) 1-11.
128. **Garofalo N., Nhieu D.-M.**, Isoperimetric and Sobolev inequalities for Carnot-Caratheodory spaces and the existence of minimal surfaces, *Comm. Pure Appl. Math.*, **49** (1996) 1081-1144.
129. **Gerl P.**, Random walks on graphs, Lecture Notes Math. 1210, Springer, 1986. 285-303.
130. **Gilbarg D., Trudinger N.**, "Elliptic partial differential equations of second order", Springer, 1977,1983,1998,2001.
131. **Gilkey P.B.**, "The index theorem and the heat equation", Publish or Perish, Boston MA, 1974.
132. **Gilkey P.B.**, "Invariance theory, heat equation and the Atiyah-Singer index theory", CRC Press, Studies in Advanced Mathematics, 1995.
133. **Greene R., Wu W.**, "Function theory of manifolds which possess a pole", Lecture Notes Math. 699, Springer, 1979.
134. **Grigor'yan A.**, On the existence of a Green function on a manifold, (in Russian) *Uspekhi Matem. Nauk*, **38** (1983) no.1, 161-162. Engl. transl.: *Russian Math. Surveys*, **38** (1983) no.1, 190-191.
135. **Grigor'yan A.**, Isoperimetric inequalities for Riemannian products, (in Russian) *Mat. Zametki*, **38** (1985) no.4, 617-626. Engl. transl.: *Math. Notes*, **38** (1985) 849-854.
136. **Grigor'yan A.**, On the existence of positive fundamental solution of the Laplace equation on Riemannian manifolds, (in Russian) *Matem. Sbornik*, **128** (1985) no.3, 354-363. Engl. transl.: *Math. USSR Sb.*, **56** (1987) 349-358.
137. **Grigor'yan A.**, On stochastically complete manifolds, (in Russian) *DAN SSSR*, **290** (1986) no.3, 534-537. Engl. transl.: *Soviet Math. Dokl.*, **34** (1987) no.2, 310-313.
138. **Grigor'yan A.**, A criterion for the existence on a Riemannian manifold of a nontrivial bounded harmonic function with finite Dirichlet integral, (in Russian) *Dokl. Akad. Nauk SSSR*, **293** (1987) no.3, 529-531. Engl. transl.: *Soviet Math. Dokl*, **35** (1987) no.2, 339-341.

139. **Grigor'yan A.**, On Liouville theorems for harmonic functions with finite Dirichlet integral, (in Russian) *Matem. Sbornik*, **132** (1987) no.4, 496-516. Engl. transl.: *Math. USSR Sbornik*, **60** (1988) no.2, 485-504.
140. **Grigor'yan A.**, Set of positive solutions of Laplace-Beltrami equation on special type of Riemannian manifolds, (in Russian) *Izv. Vyssh. Uchebn. Zaved., Matematika*, (1987) no.2, 30-37. Engl. transl.: *Soviet Math (Iz.VUZ)*, **31** (1987) no.2, 48-60.
141. **Grigor'yan A.**, On the fundamental solution of the heat equation on an arbitrary Riemannian manifold, (in Russian) *Mat. Zametki*, **41** (1987) no.3, 687-692. Engl. transl.: *Math. Notes*, **41** (1987) no.5-6, 386-389.
142. **Grigor'yan A.**, Stochastically complete manifolds and summable harmonic functions, (in Russian) *Izv. AN SSSR, ser. matem.*, **52** (1988) no.5, 1102-1108. Engl. transl.: *Math. USSR Izvestiya*, **33** (1989) no.2, 425-432.
143. **Grigor'yan A.**, Bounded solutions of the Schrödinger equation on non-compact Riemannian manifolds, (in Russian) *Trudy seminara I.G.Petrovskogo*, (1989) no.14, 66-77. Engl. transl.: *J. Soviet Math.*, **51** (1990) no.3, 2340-2349.
144. **Grigor'yan A.**, Dimension of spaces of harmonic functions, (in Russian) *Mat. Zametki*, **48** (1990) no.5, 55-61. Engl. transl.: *Math. Notes*, **48** (1990) no.5, 1114-1118.
145. **Grigor'yan A.**, The heat equation on non-compact Riemannian manifolds, (in Russian) *Matem. Sbornik*, **182** (1991) no.1, 55-87. Engl. transl.: *Math. USSR Sb.*, **72** (1992) no.1, 47-77.
146. **Grigor'yan A.**, Heat kernel upper bounds on a complete non-compact manifold, *Revista Matemática Iberoamericana*, **10** (1994) no.2, 395-452.
147. **Grigor'yan A.**, Integral maximum principle and its applications, *Proc. Roy. Soc. Edinburgh*, **124A** (1994) 353-362.
148. **Grigor'yan A.**, Heat kernel on a manifold with a local Harnack inequality, *Comm. Anal. Geom.*, **2** (1994) no.1, 111-138.
149. **Grigor'yan A.**, Heat kernel on a non-compact Riemannian manifold, *in:* "1993 Summer Research Institute on Stochastic Analysis", Ed. M.Pinsky et al., *Proceedings of Symposia in Pure Mathematics*, **57** (1995) 239-263.
150. **Grigor'yan A.**, Upper bounds of derivatives of the heat kernel on an arbitrary complete manifold, *J. Funct. Anal.*, **127** (1995) no.2, 363-389.
151. **Grigor'yan A.**, Gaussian upper bounds for the heat kernel on arbitrary manifolds, *J. Diff. Geom.*, **45** (1997) 33-52.
152. **Grigor'yan A.**, Escape rate of Brownian motion on weighted manifolds, *Applicable Analysis*, **71** (1999) no.1-4, 63-89.
153. **Grigor'yan A.**, Isoperimetric inequalities and capacities on Riemannian manifolds, *Operator Theory: Advances and Applications*, **109** (1999) 139-153.
154. **Grigor'yan A.**, Estimates of heat kernels on Riemannian manifolds, *in:* "Spectral Theory and Geometry. ICMS Instructional Conference, Edinburgh 1998", Ed. E.B. Davies and Yu. Safarov, London Math. Soc. Lecture Note Series 273, Cambridge Univ. Press, 1999. 140-225.
155. **Grigor'yan A.**, Analytic and geometric background of recurrence and non-explosion of the Brownian motion on Riemannian manifolds, *Bull. Amer. Math. Soc.*, **36** (1999) 135-249.
156. **Grigor'yan A.**, Heat kernels and function theory on metric measure spaces, *in:* "Heat kernels and analysis on manifolds, graphs, and metric spaces", *Contemporary Mathematics*, **338** (2003) 143-172.
157. **Grigor'yan A.**, Heat kernels on weighted manifolds and applications, *Contemporary Mathematics*, **398** (2006) 93-191.
158. **Grigor'yan A.**, Heat kernels on metric measure spaces, to appear in *Handbook of Geometric Analysis No.2* Ed. L. Ji, P. Li, R. Schoen, L. Simon, Advanced Lectures in Math., International Press, 2008.

159. **Grigor'yan A., Hansen W.**, A Liouville property for Schrödinger operators, *Math. Ann.*, **312** (1998) 659-716.
160. **Grigor'yan A., Hansen W.**, Lower estimates for a perturbed Green function, *J. d'Analyse Math.*, **104** (2008) 25-58.
161. **Grigor'yan A., Hsu, Elton P.**, Volume growth and escape rate of Brownian motion on a Cartan-Hadamard manifold, *in:* "Sobolev Spaces in Mathematics II", Ed. V. Maz'ya, International Mathematical Series 9, Springer, 2009. 209-225.
162. **Grigor'yan A., Hu J.**, Off-diagonal upper estimates for the heat kernel of the Dirichlet forms on metric spaces, *Invent. Math.*, **174** (2008) 81-126.
163. **Grigor'yan A., Hu J.**, Upper bounds of heat kernels on doubling spaces, preprint
164. **Grigor'yan A., Hu J., Lau K.S.**, Heat kernels on metric-measure spaces and an application to semi-linear elliptic equations, *Trans. Amer. Math. Soc.*, **355** (2003) no.5, 2065-2095.
165. **Grigor'yan A., Hu J., Lau K.S.**, Equivalence conditions for on-diagonal upper bounds of heat kernels on self-similar spaces, *J. Funct. Anal.*, **237** (2006) 427-445.
166. **Grigor'yan A., Hu J., Lau K.S.**, Obtaining upper bounds of heat kernels from lower bounds, *Comm. Pure Appl. Math.*, **61** 639-660.
167. **Grigor'yan A., Hu J., Lau K.S.**, Heat kernels on metric spaces with doubling measure, to appear in *Proceedings of Fractal Conference in Greifswald IV*
168. **Grigor'yan A., Kelbert M.**, Range of fluctuation of Brownian motion on a complete Riemannian manifold, *Ann. Prob.*, **26** (1998) 78-111.
169. **Grigor'yan A., Kelbert M.**, On Hardy-Littlewood inequality for Brownian motion on Riemannian manifolds, *J. London Math. Soc. (2)*, **62** (2000) 625-639.
170. **Grigor'yan A., Kelbert M.**, Asymptotic separation for independent trajectories of Markov processes, *Prob. Th. Rel. Fields*, **119** (2001) no.1, 31-69.
171. **Grigor'yan A., Kelbert M.**, Recurrence and transience of branching diffusion processes on Riemannian manifolds, *Annals of Prob.*, **31** (2003) no.1, 244-284.
172. **Grigor'yan A., Kumagai T.**, On the dichotomy in the heat kernel two sided estimates, *Proceedings of Symposia in Pure Mathematics*, **77** Amer. Math. Soc., Providence, RI, (2008) 199-210.
173. **Grigor'yan A., Nadirashvili N.S.**, Liouville theorems and exterior boundary value problems, (in Russian) *Izv. Vyssh. Uchebn. Zaved., Matematika*, (1987) no.5, 25-33. Engl. transl.: *Soviet Math. (Iz.VUZ)*, **31** (1987) no.5, 31-42.
174. **Grigor'yan A., Netrusov Yu., Yau S.-T.**, Eigenvalues of elliptic operators and geometric applications, *in:* "Eigenvalues of Laplacians and other geometric operators", Surveys in Differential Geometry IX, (2004) 147-218.
175. **Grigor'yan A., Noguchi M.**, The heat kernel on hyperbolic space, *Bull. London Math. Soc.*, **30** (1998) 643-650.
176. **Grigor'yan A., Saloff-Coste L.**, Heat kernel on connected sums of Riemannian manifolds, *Math. Research Letters*, **6** (1999) no.3-4, 307-321.
177. **Grigor'yan A., Saloff-Coste L.**, Dirichlet heat kernel in the exterior of a compact set, *Comm. Pure Appl. Math*, **55** (2002) 93-133.
178. **Grigor'yan A., Saloff-Coste L.**, Hitting probabilities for Brownian motion on Riemannian manifolds, *J. Math. Pures et Appl.*, **81** (2002) 115-142.
179. **Grigor'yan A., Saloff-Coste L.**, Stability results for Harnack inequalities, *Ann. Inst. Fourier, Grenoble*, **55** (2005) no.3, 825-890.
180. **Grigor'yan A., Saloff-Coste L.**, Heat kernel on manifolds with ends, *Ann. Inst. Fourier, Grenoble*, **59** (2009)
181. **Grigor'yan A., Telcs A.**, Sub-Gaussian estimates of heat kernels on infinite graphs, *Duke Math. J.*, **109** (2001) no.3, 452-510.
182. **Grigor'yan A., Telcs A.**, Harnack inequalities and sub-Gaussian estimates for random walks, *Math. Ann.*, **324** no.3, (2002) 521-556.

183. **Grigor'yan A., Yau S.-T.**, Decomposition of a metric space by capacitors, *in:* "Differential Equations: La Pietra 1996", Ed. Giaquinta et. al., *Proceeding of Symposia in Pure Mathematics*, **65** 1999. 39-75.
184. **Grigor'yan A., Yau S.-T.**, Isoperimetric properties of higher eigenvalues of elliptic operator, *Amer. J. Math*, **125** (2003) 893-940.
185. **Grigor'yan A., Yau S.-T., ed.**, "Eigenvalues of Laplacians and other geometric operators", Surveys in Differential Geometry IX, International Press, 2004.
186. **Gromov M.**, "Structures métriques pour les variétés riemanniennes", Paris: Cedic/Ferdnand Nathan, 1981.
187. **Gromov M.**, "Metric structures for Riemannian and non-Riemannian spaces", Birkhäuser, 1999,2007.
188. **Gross L.**, Logarithmic Sobolev inequalities, *Amer. J. Math.*, **97** (1976) 1061-1083.
189. **Gross L.**, Heat kernel analysis on Lie groups, *in:* "Stochastic analysis and related topics, VII (Kusadasi, 1998)", Progr. Probab. 48, Birkhäuser Boston, Boston, MA, 2001. 1–58.
190. **Guionnet A., Zegarlinski B.**, Lectures on logarithmic Sobolev inequalities, *in:* "Séminaire de Probabilités, XXXVI", Lecture Notes in Math. 1801, Springer, Berlin, yab2003 1–134.
191. **Guivarc'h Y.**, Sur la loi des grands nombres et le rayon spectral d'une marche aléatoire, *Journée sur les marches aléatoires, Astérisque*, **74** (1980) 47-98.
192. **Gushchin A.K.**, On the uniform stabilization of solutions of the second mixed problem for a parabolic equation, (in Russian) *Matem. Sbornik*, **119(161)** (1982) no.4, 451-508. Engl. transl.: *Math. USSR Sb.*, **47** (1984) 439-498.
193. **Gushchin A.K., Michailov V.P., Michailov Ju.A.**, On uniform stabilization of the solution of the second mixed problem for a second order parabolic equation, (in Russian) *Matem. Sbornik*, **128(170)** (1985) no.2, 147-168. Engl. transl.: *Math. USSR Sb.*, **56** (1987) 141-162.
194. **Halmos P.R.**, "Measure theory", D. Van Nostrand Company, Inc., New York, N. Y., 1950.
195. **Hambly B.M., Kumagai T.**, Transition density estimates for diffusion processes on post critically finite self-similar fractals, *Proc. London Math. Soc. (3)*, **78** (1999) 431–458.
196. **Hamel F., Nadirashvili N., Russ E.**, Some isoperimetric problems for the principal eigenvalues of second-order elliptic operators in divergence form, *C. R. Acad. Sci. Paris, Ser. I*, **344** (2007) 169–174.
197. **Hansen W.**, Harnack inequalities for Schrödinger operators, *Ann. Scuola Norm. Sup. Pisa*, **28** (1999) 413-470.
198. **Hebisch W., Saloff-Coste, L.**, Gaussian estimates for Markov chains and random walks on groups, *Ann. Prob.*, **21** (1993) 673–709.
199. **Hebisch W., Saloff-Coste, L.**, On the relation between elliptic and parabolic Harnack inequalities, *Ann. Inst. Fourier*, **51** (2001) no.5, 1437-1481.
200. **Helgason S.**, "Differential geometry, Lie groups, and symmetric spaces", Graduate Studies in Mathematics 34, AMS, 2001.
201. **Herbst I.W., Zhao Z.**, Green's functions for the Schrödinger equation with short-range potential, *Duke Math. J.*, **59** (1989) 475–519.
202. **Hino M., Ramírez, J.**, Small-time Gaussian behavior of symmetric diffusion semigroup, *Ann. Prob.*, **31** (2003) no.3, 1254-1295.
203. **Hoffman D., Spruck J.**, Sobolev and isoperimetric inequalities for Riemannian submanifolds, *Comm. Pure Appl. Math.*, **27** (1974) 715–727. See also "A correction to: Sobolev and isoperimetric inequalities for Riemannian submanifolds", *Comm. Pure Appl. Math.*, **28** (1975) no.6, 765–766.
204. **Holopainen I.**, Rough isometries and p-harmonic functions with finite Dirichlet integral, *Revista Matemática Iberoamericana*, **10** (1994) 143-176.

205. **Holopainen I.**, Solutions of elliptic equations on manifolds with roughly Euclidean ends, *Math. Z.*, **217** (1994) 459-477.
206. **Holopainen I.**, Volume growth, Green's functions and parabolicity of ends, *Duke Math. J.*, **97** (1999) no.2, 319-346.
207. **Hörmander L.**, "The Analysis of Linear Partial Differential Operators I", Springer, 1983.
208. **Hörmander L.**, "The Analysis of Linear Partial Differential Operators III", Springer, 1985.
209. **Hsu, Elton P.**, Heat semigroup on a complete Riemannian manifold, *Ann. Probab.*, **17** (1989) 1248-1254.
210. **Hsu, Elton P.**, "Stochastic Analysis on Manifolds", Graduate Texts in Mathematics 38, 2002.
211. **Ichihara K.**, Curvature, geodesics and the Brownian motion on a Riemannian manifold. I Recurrence properties, *Nagoya Math. J.*, **87** (1982) 101-114.
212. **Ichihara K.**, Curvature, geodesics and the Brownian motion on a Riemannian manifold. II Explosion properties, *Nagoya Math. J.*, **87** (1982) 115-125.
213. **Isham C. J.**, "Modern differential geometry for physicists", World Scientific Lecture Notes in Physics 61, World Scientific Publishing, 1999.
214. **Ishige K., Murata M.**, Uniqueness of nonnegative solutions of the Cauchy problem for parabolic equations on manifolds or domains, *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)*, **30** (2001) no.1, 171–223.
215. **Jerison D., Sánchez-Calle A.**, Estimates for the heat kernel for a sum of squares of vector fields, *Indiana Univ. Math. J.*, **35** (1986) no.4, 835-854.
216. **Jerison D., Sánchez-Calle A.**, Subelliptic, second order differential operators, *in:* "Complex analysis, III (College Park, Md., 1985-86)", Lecture Notes Math. 1277, Springer, 1987. 46-77.
217. **Jorgenson J., Lang S.**, The ubiquitous heat kernel, *in:* "Mathematics unlimited—2001 and beyond", Springer, Berlin, 2001. 655–683.
218. **Jorgenson J., Lang S.**, Spherical inversion on $\mathrm{SL}_2(\mathbf{C})$, *in:* "Heat kernels and analysis on manifolds, graphs, and metric spaces", *Contemporary Mathematics*, **338** (2003) 241-270.
219. **Jorgenson J., Lynne, W., editors**, "The ubiquitous heat kernel. Papers from a special session of the AMS Meeting held in Boulder, CO, October 2–4, 2003", Contemporary Mathematics 398, American Mathematical Society, Providence, RI, 2006.
220. **Kaimanovich V.A., Vershik A.M.**, Random walks on discrete groups: boundary and entropy, *Ann. Prob.*, **11** (1983) no.3, 457-490.
221. **Karp L.**, Subharmonic functions, harmonic mappings and isometric immersions, *in:* "Seminar on Differential Geometry", Ed. S.T.Yau, Ann. Math. Stud. 102, Princeton, 1982.
222. **Karp L., Li P.**, The heat equation on complete Riemannian manifolds, unpublished manuscript 1983.
223. **Khas'minskii R.Z.**, Ergodic properties of recurrent diffusion prossesses and stabilization of solution to the Cauchy problem for parabolic equations, *Theor. Prob. Appl.*, **5** (1960) no.2, 179-195.
224. **Kigami J.**, "Analysis on fractals", Cambridge University Press, 2001.
225. **Kigami J.**, Local Nash inequality and inhomogeneity of heat kernels, *Proc. London Math. Soc. (3)*, **89** (2004) 525-544.
226. **Kirillov A.A., Gvishiani A.D.**, "Theorems and problems in functional analysis", Springer-Verlag, New York-Berlin, 1982.
227. **Klingenberg W.**, "Riemannian Geometry", de Gruyter, 1982.
228. **Kobayashi S., Nomizu K.**, "Foundations of differential geometry. Vol.I, II", Interscience Publishers, New York, 1963,1969.

229. **Kolmogorov A.N., Fomin S.V.**, "Elements of the theory of functions and functional analysis", (in Russian) Nauka, Moscow, 1989.
230. **Kondrat'ev V.A., Landis E.M.**, Qualitative theory of linear second-order partial differential equations, (in Russian) Itogi Nauki i Techniki, serija Sovremennye Problemy Matematiki, Fundamental'nye Napravlenija 32, VINITI, Moscow, 1988. 99-215. Engl. transl.: *in:* "Partial Differential Equations III", Encyclopedia of Math. Sci. 32, Springer, 1990.
231. **Koranyi A., Taylor J.C.**, Minimal solutions of the heat equation and uniqueness of the positive Cauchy problem on homogeneous spaces, *Proc. Amer. Math. Soc.*, **94** (1985) 273-278.
232. **Korevaar N.**, Upper bounds for eigenvalues of conformal metric, *J. Diff. Geom.*, **37** (1993) 73-93.
233. **Kotani M., Shirai T., Sunada T.**, Asymptotic behavior of the transition probability of a random walk on an infinite graph, *J. Funct. Anal.*, **159** (1998) 664-689.
234. **Kotani M., Sunada T.**, Albanese maps and off diagonal long time asymptotics for the heat kernel, preprint 1999.
235. **Kreyszig E.**, "Introductory functional analysis with applications", John Wiley & Sons, Inc., New York, 1989.
236. **Krylov N.V., Safonov M.V.**, A certain property of solutions of parabolic equations with measurable coefficients, (in Russian) *Izv. Akad. Nauk SSSR*, **44** (1980) 81-98. Engl. transl.: *Math. USSR Izvestija*, **16** (1981) 151-164.
237. **Kurdyukov Yu.A.**, L^p-theory of elliptic differential operators on manifolds of bounded geometry, *Acta Applic. Math.*, **23** (1991) 223-260.
238. **Kusuoka S.**, A dissusion process on a fractal, *in:* "Probabilistic methods in Mathematical Physics, Taniguchi Symp., Katana, 1985", Ed. K.Ito and N.Ikeda, Kinokuniya-North Holland, Amsterdam, 1987. 251-274.
239. **Kusuoka S., Stroock D.W.**, Long time estimates for the heat kernel associated with uniformly subelliptic symmetric second order operators, *Ann. Math.*, **127** (1989) 165-189.
240. **Kuz'menko Yu.T., Molchanov S.A.**, Counterexamples to Liouville-type theorems, (in Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.*, (1979) no.6, 39-43. Engl. transl.: *Moscow Univ. Math. Bull.*, **34** (1979) 35-39.
241. **Ladyzenskaja O.A., V.A. Solonnikov, Ural'ceva N.N.**, "Linear and quasilinear equations of parabolic type", Providence, Rhode Island, 1968.
242. **Ladyzhenskaya O.A., Ural'tseva N.N.**, "Linear and quasilinear elliptic equations", Academic Press, New York and London, 1968.
243. **Landis E.M.**, "The second order equations of elliptic and parabolic type", (in Russian) Nauka, Moscow, 1971. Engl. transl.: Transl. of Mathematical Monographs 171, AMS publications, 1998.
244. **Lang S.**, "Differential and Riemannian manifolds", Graduate Texts in Mathematics 160, Springer-Verlag, New York, 1995.
245. **Lax P.D**, On the Cauchy problem for hyperbolic equations and the differentiability of solutions of elliptic equations, *Comm. Pure Appl. Math.*, **8** (1955) 615-633.
246. **Li P.**, Uniqueness of L^1-solutions for the Laplace equation and the heat equation on Riemannian manifolds, *J. Diff. Geom.*, **20** (1984) no.2, 447-457.
247. **Li P.**, Curvature and function theory on Riemannian manifolds, *Surveys in Diff. Geom.*, **VII** (2000) 375-432.
248. **Li P., Schoen R.**, L^p and mean value properties of subharmonic functions on Riemannian manifolds, *Acta Math.*, **153** (1984) 279-301.
249. **Li P., Schoen R., Yau S.-T.**, On the isoperimetric inequality for minimal surfaces, *Ann. Scuola Norm. Sup. Pisa*, **11** (1984) 237-244.
250. **Li P., Tam L.F.**, Positive harmonic functions on complete manifolds with non-negative curvature outside a compact set, *Ann. Math.*, **125** (1987) 171–207.

251. **Li P., Tam L.F.**, Harmonic functions and the structure of complete manifolds, *J. Diff. Geom.*, **35** (1992) 359–383.
252. **Li P., Tam L.F.**, Green's function, harmonic functions and volume comparison, *J. Diff. Geom.*, **41** (1995) 277–318.
253. **Li P., Treibergs A.**, Applications of eigenvalue techniques to geometry, *in:* "Contemporary Geometry", Univ. Ser. Math., Plenum, New York, 1991. 21-52.
254. **Li P., Wang J.**, Convex hull properties of harmonic maps, *J. Diff. Geom.*, **48** (1998) 497-530.
255. **Li P., Wang J.**, Mean value inequalities, *Indiana Univ. Math. J.*, **48** (1999) 1257-1283.
256. **Li P., Yau S.-T.**, Eigenvalues of a compact Riemannian manifold, *Proc. Symp. Pure Math.*, **36** (1980) 205–239.
257. **Li P., Yau S.-T.**, On the Schrödinger equation and the eigenvalue problem, *Comm. Math. Phys.*, **88** (1983) 309–318.
258. **Li P., Yau S.-T.**, On the parabolic kernel of the Schrödinger operator, *Acta Math.*, **156** (1986) no.3-4, 153-201.
259. **Liskevich V., Semenov Yu.**, Two-sided estimates of the heat kernel of the Schrödinger operator, *Bull. London Math. Soc.*, **30** (1998) 596-602.
260. **Liskevich V., Semenov Yu.**, Estimates for fundamental solutions of second-order parabolic equations, *J. London Math. Soc. (2)*, **62** (2000) no.2, 521–543.
261. **Losev A.G.**, Some Liouville theorems on Riemannian manifolds of a special type, (in Russian) *Izv. Vyssh. Uchebn. Zaved. Matematika*, (1991) no.12, 15-24. Engl. transl.: *Soviet Math. (Iz. VUZ)*, **35** (1991) no.12, 15–23.
262. **Losev A.G.**, Some Liouville theorems on non-compact Riemannian manifolds, (in Russian) *Sibirsk. Mat. Zh.*, **39** (1998) no.1, 87-93. Engl. transl.: *Siberian Math. J.*, (39) (1998) no.1, 74–80.
263. **Lusternik L.A., Sobolev S.L.**, "Elements of functional analysis", Hindustan Publishing Corp., Delhi, 1974.
264. **Lyons T.**, Instability of the Liouville property for quasi-isometric Riemannian manifolds and reversible Markov chains, *J. Diff. Geom.*, **26** (1987) 33-66.
265. **Lyons T.**, Random thoughts on reversible potential theory, *in:* "Summer School in Potential Theory, Joensuu 1990", Ed. Ilpo Laine, Publications in Sciences 26, University of Joensuu, 71-114.
266. **Lyons T.**, Instability of the conservative property under quasi-isometries, *J. Diff. Geom.*, **34** (1991) 483-489.
267. **Malliavin P., Stroock D.W.**, Short time behavior of the heat kernel and its logarithmic derivatives, *J. Diff. Geom.*, **44** (1996) 550-570.
268. **Maz'ya V.G.**, On certain intergal inequalities for functions of many variables, (in Russian) *Problemy Matematicheskogo Analiza, Leningrad. Univer.*, **3** (1972) 33-68. Engl. transl.: *J. Soviet Math.*, **1** (1973) 205-234.
269. **Maz'ya V.G.**, "Sobolev spaces", Springer, 1985.
270. **Maz'ya V.G.**, Classes of domains, measures and capacities in the theory of differentiable functions, *in:* "Analysis, III", Encyclopaedia Math. Sci. 26, Springer, Berlin, 1991. 141-211.
271. **McKean H.P.**, "Stochastic integrals", Academic Press, 1969.
272. **McKean H.P.**, An upper bound to the spectrum of Δ on a manifold of negative curvature, *J. Diff. Geom.*, **4** (1970) 359–366.
273. **McOwen R.**, "Partial differential equations: methods and applications", Prentice Hall, 1996.
274. **Milnor J.**, On deciding whether a surface is parabolic or hyperbolic, *Amer. Math. Monthly*, **84** (1977) 43-46.
275. **Minakshisundaram S.**, Eigenfunctions on Riemannian manifolds, *J. Indian Math. Soc.*, **17** (1953) 158-165.

276. **Minakshisundaram S., Pleijel, A.**, Some properties of eigenfunctions of the Laplace operator on Riemannian manifolds, *Canad. J. Math.*, **1** (1949) 242-256.
277. **Molchanov S.A.**, Diffusion processes and Riemannian geometry, (in Russian) *Uspekhi Matem. Nauk*, **30** (1975) no.1, 3-59. Engl. transl.: *Russian Math. Surveys*, **30** (1975) no.1, 1-63.
278. **Morgan F.**, Isoperimetric estimates in products, *Ann. Global Anal. Geom.*, **30** (2006) no.1, 73–79.
279. **Moser J.**, On Harnack's theorem for elliptic differential equations, *Comm. Pure Appl. Math.*, **14** (1961) 577-591.
280. **Moser J.**, A Harnack inequality for parabolic differential equations, *Comm. Pure Appl. Math.*, **17** (1964) 101-134. Correction: *Comm. Pure Appl. Math.*, **20** (1967) 231-236.
281. **Mukherjea A., Pothoven K.**, "Real and functional analysis. Part B. Functional analysis", Plenum Press, New York, 1986.
282. **Murata M.**, Positive solutions and large time behaviors of Schrödinger semigroups, Simon's problem, *J. Funct. Anal.*, **56** (1984) 300-310.
283. **Murata M.**, Large time asymptotics for fundamental solutions of diffusion equations, *Tôhoku Math. J.*, **37** (1985) 151-195.
284. **Murata M.**, Structure of positive solutions to $(-\Delta + V)u = 0$ in R^n, *Duke Math. J.*, **53** (1986) no.4, 869-943.
285. **Murata M.**, Positive harmonic functions on rotationary symmetric Riemannian manifolds, *in:* "Potential Theory", Ed. M.Kishi, Walter de Gruyter, Berlin, 1992. 251-259.
286. **Murata M.**, Uniqueness and nonuniqueness of the positive Cauchy problem for the heat equation on Riemannian manifolds, *Proceedings of AMS*, **123** (1995) no.6, 1923-1932.
287. **Mustapha S.**, Gaussian estimates for heat kernels on Lie groups, *Math. Proc. Camb. Phil. Soc.*, **128** (2000) 45-64.
288. **Nadirashvili N.S.**, A theorem of Liouville type on a Riemannian manifold, (in Russian) *Uspekhi Matem. Nauk*, **40** (1985) no.5, 259-260. Engl. transl.: *Russian Math. Surveys*, **40** (1986) no.5, 235-236.
289. **Nadirashvili N.S.**, Metric properties of eigenfunctions of the Laplace operator on manifolds, *Ann. Inst. Fourier (Grenoble)*, **41** (1991) no.1, 259–265.
290. **Nadirashvili N.S.**, Isoperimetric inequality for the second eigenvalue of a sphere, *J. Diff. Geom.*, **61** (2002) no.2, 335–340.
291. **Nadirashvili N.S., Toth J.A., Jakobson D.**, Geometric properties of eigenfunctions, *Uspekhi Mat. Nauk*, **56** (2001) no.6, 67–88. (in Russian) Engl. transl.: *Russian Math. Surveys*, **56** (2001) no.6, 1085–1105.
292. **Nash J.**, Continuity of solutions of parabolic and elliptic equations, *Amer. J. Math.*, **80** (1958) 931-954.
293. **Nirenberg L.**, Remarks on strongly elliptic partial differential equations, *Comm. Pure Appl. Math.*, **8** (1955) 649-675.
294. **Nirenberg L.**, On elliptic partial differential equations, *Ann. Scuola Norm. Sup. Pisa*, **13** (1959) 115-162.
295. **Norris J.R.**, Heat kernel bounds and homogenization of elliptic operators, *Bull. London Math. Soc.*, **26** (1994) 75-87.
296. **Norris J.R.**, Heat kernel asymptotics and the distance function in Lipschitz Riemannian manifolds, *Acta Math.*, **179** (1997) 79-103.
297. **Oleinik O.A., Radkevich E.V.**, "Second order equations with nonnegative characteristic form", AMS, Plenum Press, 1973.
298. **Oleinik O.A., Radkevich E.V.**, The method of introducing a parameter in the study of evolutionary equations, (in Russian) *Uspekhi Matem. Nauk*, **33** (1978) no.5, 7-76. Engl. transl.: *Russian Math. Surveys*, **33** (1978) no.5, 7-84.

299. **Petersen P.**, "Riemannian geometry", Graduate Texts in Mathematics 171, Springer, 1998.
300. **Pinchover Y.**, Large time behavior of the heat kernel and the behavior of the Green function near criticality for nonsymmetric elliptic operators, *J. Funct. Anal.*, **104** (1992) no.1, 54-70.
301. **Pinchover Y.**, On non-existence of any λ_0-invariant positive harmonic function, a counter example to Stroock's conjecture, *Comm. Partial Differential Equations*, **20** (1995) 1831-1846.
302. **Pittet Ch.**, The isoperimetric profile of homogeneous Riemannian manifolds, *J. Diff. Geom.*, **54** (2000) no.2, 255-302.
303. **Pittet Ch., Saloff-Coste L.**, A survey on the relationship between volume growth, isoperimetry, and the behavior of simple random walk on Cayley graphs, with examples, preprint
304. **Pittet Ch., Saloff-Coste L.**, On the stability of the behavior of random walks on groups, *J. Geom. Anal.*, **10** (2000) no.4, 713-737.
305. **Pólya G., Szegö G.**, "Isoperimetric inequalities in mathematical physics", Princeton University Press, Princeton, 1951.
306. **Porper F.O., Eidel'man S.D.**, Two-side estimates of fundamental solutions of second-order parabolic equations and some applications, (in Russian) *Uspekhi Matem. Nauk*, **39** (1984) no.3, 101-156. Engl. transl.: *Russian Math. Surveys*, **39** (1984) no.3, 119-178.
307. **Qian Z.**, Gradient estimates and heat kernel estimates, *Proc. Roy. Soc. Edinburgh*, **125A** (1995) 975-990.
308. **Rauch J.**, "Partial differential equaions", Graduate Texts in Mathematics 128, Splinger-Verlag, 1991.
309. **Reed M., Simon B.**, "Methods of modern mathematical physics. II: Fourier analysis, self-adjointness", Academic Press, 1975.
310. **Riesz F., Sz.-Nagy B.**, "Functional analysis", Dover Publications, Inc., New York, 1990.
311. **Robin L.**, "Fonctions sphériques de Legendre et fonctions sphéroïdales. Tome III", Collection Technique et Scientifique du C. N. E. T. Gauthier-Villars, Paris, 1959.
312. **Robinson D.W.**, "Elliptic operators and Lie groups", Oxford Math. Mono., Clarenton Press, Oxford New York Tokyo, 1991.
313. **Röckner M., Wang F.Y.**, Weak Poincaré inequalities and L^2-convergence rates of Markov semigroups, *J. Funct. Anal.*, **185** (2001) 564-603.
314. **Röckner M., Wang F.Y.**, Harnack and functional inequalities for generalized Mehler semigroups, *J. Funct. Anal.*, **203** (2003) 237-261.
315. **Röckner M., Wang F.Y.**, Supercontractivity and ultracontractivity for (nonsymmetric) diffusion semigroups on manifolds, *Forum Math.*, **15** (2003) no.6, 893–921.
316. **Roelcke W.**, Über den Laplace-Operator auf Riemannschen Mannigfaltigkeiten mit diskontinuierlichen Gruppen, *Math. Nachr.*, **21** (1960) 131–149.
317. **Rosenberg S.**, "The Laplacian on a Riemannian manifold", London Mathematical Society Student Texts 31, Cambridge University Press, 1997.
318. **Rudin W.**, "Functional analysis", McGraw-Hill, Inc., New York, 1991.
319. **Saloff-Coste L.**, A note on Poincaré, Sobolev, and Harnack inequalities, *Internat. Math. Res. Notices*, **2** (1992) 27-38.
320. **Saloff-Coste L.**, Uniformly elliptic operators on Riemannian manifolds, *J. Diff. Geom.*, **36** (1992) 417-450.
321. **Saloff-Coste L.**, Isoperimetric inequalities and decay of iterated kernels for almost-transitive Markov chains, *Combinatorics, Probability, Computing*, **4** (1995) no.4, 419–442.

322. **Saloff-Coste L.**, Parabolic Harnack inequality for divergence form second order differential operators, *Potential Analysis*, **4** (1995) 429-467.
323. **Saloff-Coste L.**, Lectures on finite Markov chains, *in:* "Lectures on probability theory and statistics", Lecture Notes Math. 1665, Springer, 1997. 301-413.
324. **Saloff-Coste L.**, "Aspects of Sobolev inequalities", LMS Lecture Notes Series 289, Cambridge Univ. Press, 2002.
325. **Saloff-Coste L.**, Pseudo-Poincaré inequalities and applications to Sobolev inequalities, preprint
326. **Schoen R., Yau S.-T.**, "Lectures on Differential Geometry", Conference Proceedings and Lecture Notes in Geometry and Topology 1, International Press, 1994.
327. **Schwartz L.**, "Théorie des distributions. I, II", Act. Sci. Ind. 1091, 1122, Hermann et Cie., Paris, 1951.
328. **Sobolev S.L.**, On a theorem of functional analysis, (in Russian) *Matem. Sbornik*, **4** (1938) 471-497.
329. **Sternberg S.**, "Lectures on differential geometry", Chelsea Publishing Co., New York, 1983.
330. **Strichartz R.S.**, Analysis of the Laplacian on the complete Riemannian manifold, *J. Funct. Anal.*, **52** (1983) no.1, 48-79.
331. **Strichartz R.S.**, Laplacians on fractals with spectral gaps have nicer Fourier series, *Math. Res. Lett.*, **12** (2005) no.2-3, 269–274.
332. **Strichartz R.S.**, "Differential equations on fractals. A tutorial", Princeton University Press, Princeton, NJ, 2006.
333. **Stroock D.W.**, Estimates on the heat kernel for the second order divergence form operators, *in:* "Probability theory. Proceedings of the 1989 Singapore Probability Conference held at the National University of Singapore, June 8-16 1989", Ed. L.H.Y. Chen, K.P. Choi, K. Hu and J.H. Lou, Walter De Gruyter, 1992. 29-44.
334. **Stroock D.W.**, "Probability Theory. An analytic view", Cambridge Univ. Press, 1993.
335. **Stroock D.W.**, "A concise introduction to the theory of integration", Birkhäuser Boston, Inc., Boston, MA, (1999)
336. **Stroock D.W., Turetsky J.**, Upper bounds on derivatives of the logarithm of the heat kernel, *Comm. Anal. Geom.*, **6** (1998) no.4, pa669–685
337. **Sturm K-Th.**, Heat kernel bounds on manifolds, *Math. Ann.*, **292** (1992) 149-162.
338. **Sturm K-Th.**, Analysis on local Dirichlet spaces I. Recurrence, conservativeness and L^p-Liouville properties, *J. Reine. Angew. Math.*, **456** (1994) 173-196.
339. **Sturm K-Th.**, Analysis on local Dirichlet spaces II. Upper Gaussian estimates for the fundamental-solutions of parabolic equations, *Osaka J. Math*, **32** (1995) no.2, 275-312.
340. **Sullivan D.**, Related aspects of positivity in Riemannian geometry, *J. Diff. Geom.*, **25** (1987) 327-351.
341. **Sung C.-J., Tam L.-F., Wang J.**, Spaces of harmonic functions, *J. London Math. Soc. (2)*, (2000) no.3, 789–806.
342. **Täcklind S.**, Sur les classes quasianalytiques des solutions des équations aux dérivées partielles du type parabolique, *Nova Acta Regalis Societatis Scientiarum Uppsaliensis, (4)*, **10** (1936) no.3, 3-55.
343. **Takeda M.**, On a martingale method for symmetric diffusion process and its applications, *Osaka J. Math*, **26** (1989) 605-623.
344. **Takeda M.**, Subcriticality and conditional gaugeability of generalized Schrödinger operators, *J. Funct. Anal.*, **191** (2002) no.2, 343–376.
345. **Takeda M.**, Gaussian bounds of heat kernels of Schrödinger operators on Riemannian manifolds, *Bull. London Math. Soc.*, **39** (2007) 85-94.

346. **Taylor A.E., Lay D.C.**, "Introduction to functional analysis", Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1986.
347. **Tikhonov A.N.**, Uniqueness theorems for the equation of heat conduction, (in Russian) *Matem. Sbornik*, **42** (1935) 199-215.
348. **Treves F.**, "Introduction to pseudodifferential and Fourier integral operators, I", Plenum Press, 1982.
349. **Urakawa H.**, Geometry of Laplace-Beltrami operator on a complete Riemannian manifold, *in:* "Progress in differential geometry", Advanced Studies in Pure Math.22, Math. Soc. Japan, Tokyo, (1993) 347-406.
350. **Ushakov V.I.**, Stabilization of solutions of the third mixed problem for a second order parabolic equation in a non-cylindric domain, (in Russian) *Matem. Sbornik*, **111** (1980) 95-115. Engl. transl.: *Math. USSR Sb.*, **39** (1981) 87-105.
351. **Varadhan S.R.S.**, On the behavior of the fundamental solution of the heat equation with variable coefficients, *Comm. Pure Appl. Math.*, **20** (1967) 431-455.
352. **Varopoulos N.Th.**, Potential theory and diffusion of Riemannian manifolds, *in:* "Conference on Harmonic Analysis in honor of Antoni Zygmund. Vol I, II.", Wadsworth Math. Ser., Wadsworth, Belmont, Calif., 1983. 821-837.
353. **Varopoulos N.Th.**, Hardy-Littlewood theory for semigroups, *J. Funct. Anal.*, **63** (1985) no.2, 240-260.
354. **Varopoulos N.Th.**, Isoperimetric inequalities and Markov chains, *J. Funct. Anal.*, **63** (1985) no.2, 215-239.
355. **Varopoulos N.Th., Saloff-Coste L., Coulhon T.**, "Analysis and geometry on groups", Cambridge Tracts in Mathematics, 100, Cambridge University Press, Cambridge, 1992.
356. **Vladimirov V. S.**, "Methods of the theory of generalized functions", Analytical Methods and Special Functions 6, Taylor & Francis, London, 2002.
357. **Weyl H.**, The method of orthogonal projection in potential theory, *Duke Math. J.*, **1** (1940) 414-444.
358. **Woess W.**, Random walks on infinite graphs and groups - a survey on selected topics, *Bull. LMS*, **26** (1994) 1-60.
359. **Woess W.**, "Random walks on infinite graphs and groups", Cambridge Tracts in Mathematics 138, Cambridge Univ. Press., 2000.
360. **Yan J.-A.**, A formula for densities of transition functions, *in:* "Sem. Prob. XXII", 92-100. Lecture Notes Math. 1321,
361. **Yau S.-T.**, Harmonic functions on complete Riemannian manifolds, *Comm. Pure Appl. Math.*, **28** (1975) 201-228.
362. **Yau S.-T.**, Isoperimetric constant and the first eigenvalue of a compact Riemannian manifold, *Ann. Sci. Ecole Norm. Sup., 4th serie*, **8** (1975) no.4, 487-507.
363. **Yau S.-T.**, Some function-theoretic properties of complete Riemannian manifolds and their applications to geometry, *Indiana Math. J.*, **25** (1976) 659-670.
364. **Yau S.-T.**, On the heat kernel of a complete Riemannian manifold, *J. Math. Pures Appl., ser. 9*, **57** (1978) 191-201.
365. **Yau S.-T.**, Survey on partial differential equations in differential geometry, *Ann. Math. Studies*, **102** (1982) 3-70.
366. **Yau S.-T.**, Harnack inequality for non-self-adjoint evolution equations, *Math. Research Letters*, **2** (1995) 387-399.
367. **Yau S.-T.**, An estimate of the gap of the first two eigenvalues in the Schrödinger operator, *in:* "Lectures on partial differential equations", New Stud. Adv. Math. 2, Int. Press, Somerville, MA, 2003. 223–235.
368. **Yosida K.**, "Functional analysis", Springer, 1980.
369. **Zegarlin'ski B.**, Recent progress in the hypercontractive semigroups, *in:* "Seminar on Stochastic Analysis, Random Fields and Applications (Ascona, 1993)", Progr. Probab. 36, Birkhäuser, Basel, 1995. 253–262.

370. **Zhang Q.S.**, Large time behavior of Schrodinger heat kernels and applications, *Comm. Math. Phys.*, **210** (2000) no.2, 371–398.
371. **Zhang Q.S., Zhao Z.**, Estimates of global bounds for some Schrödinger heat kernels on manifolds, *Illinois J. Math.*, **44** (2000) no.3, 556–573.

Some notation

- $\mathbb{R}_+ \equiv (0, +\infty)$
- esup – the essential supremum
- einf – the essential infimum
- $f_+ \equiv \frac{1}{2}(|f| + f)$ - the positive part
- $f_- \equiv \frac{1}{2}(|f| - f)$ - the negative part
- $[f]_a^b \equiv f(b) - f(a)$
- $\log_+ x \equiv (\log x)_+$
- $\simeq$ "comparable to"; namely, $f(x) \simeq g(x)$ if there exists a constant $C > 0$ such that $C^{-1} g(x) \leq f(x) \leq C g(x)$ for all x from a specified domain.
- $B_r(x)$ – a ball in $\mathbb{R}^n$, that is, $B_r(x) = \{y \in \mathbb{R}^n : |x - y| < r\}$
- $B_r \equiv B_r(0) = \{y \in \mathbb{R}^n : |y| < r\}$.
- ω_n – the area of the unit $(n-1)$-sphere in $\mathbb{R}^n$.
- 1_A – the indicator function of a set A, that is, $1_A(x) = 1$ if $x \in A$ and $1_A(x) = 0$ otherwise.
- $\Subset$ "compact inclusion"; $A \Subset B$ means that the closure $\overline{A}$ of the set A is compact and $\overline{A} \subset B$.
- $\mathcal{H}$ – a Hilbert space
- $\rightharpoonup$ the sign of the weak convergence (in a Hilbert space)
- M – a Riemannian manifold
- $x \to \infty$ – a sequence of points on a manifold eventually leaving any compact set.
- $\mathbf{g}$ – the Riemannian metric on M
- μ – a reference measure on M
- Δ_μ – the weighted Laplace operator on M
- $\mathcal{L}$ – the Dirichlet Laplace operator on M
- $L^p(M, \mu)$ – the Lebesgue function space
- $\|\cdot\|_p \equiv \|\cdot\|_{L^p}$
- $u \leq v \mod W_0^1$ means that $u \leq v + w$ where $w \in W_0^1$.
- d – the geodesic distance on M
- $B(x, r)$ – a geodesic ball on M with respect to the geodesic distance $d(x, y)$.

Conventions.

- Summation is assumed over repeated indices. For example,

$$\xi_i x^i = \sum_{i=1}^{n} \xi_i x^i, \quad a^{ij} u_j = \sum_{j=1}^{n} a^{ij} u_j, \quad g_{ij} v^i v^j = \sum_{i,j=1}^{n} g_{ij} v^i v^j,$$

  etc.
- Letters c, C, c', C', etc denote positive constants (depending on specified parameters) whose value may change at each occurrence.
- positive≡strictly positive, negative≡strictly negative, decreasing≡non-increasing, increasing≡non-decreasing

Index