

References¹

1. Abels, H., Husseini, R.: On hypoellipticity of generators of Lévy processes. *Ark. Mat.* **48**, 231–242 (2010) (p. 37)
2. Abels, H., Kassmann, M.: The Cauchy problem and the martingale problem for integro-differential operators with non-smooth kernels. *Osaka J. Math.* **46**, 661–683 (2009) (p. 94)
3. Aït-Sahalia, Y., Jacod, J.: Estimating the degree of activity of jumps in high frequency data. *Ann. Stat.* **37**, 2202–2244 (2009) (p. 125)
4. Albeverio, S., Rüdiger, B., Wu, J.-L.: Invariant measures and symmetry property of Lévy type operators. *Potential Anal.* **13**, 147–168 (2000) (p. 143)
5. Applebaum, D.: *Lévy Processes and Stochastic Calculus*, 2nd edn. Cambridge University Press, Cambridge (2009) (p. 40, 108)
6. Aronson, D.G.: Bounds on the fundamental solution of a parabolic equation. *Bull. Am. Math. Soc.* **73**, 890–896 (1967) (p. 5)
7. Aurzada, F., Döring, L., Savov, M.: Small time Chung type LIL for Lévy processes. *Bernoulli* **19**, 115–136 (2013) (p. 129)
8. Azéma, J., Kaplan-Duflo, D., Revuz, D.: Réurrence fine des processus de Markov. *Ann. Inst. Henri Poincaré (Sér. B)* **2**, 185–220 (1966) (p. 163)
9. Baeumer, B., Kovács, M., Meerschaert, M.M., Schilling, R.L., Straka, P.: Reflected spectrally negative stable processes and their governing equations. Preprint [arXiv: 1301.5605] (2013) (p. 24)
10. Baldus, F.: Application of the Weyl–Hörmander calculus to generators of Feller semigroups. *Math. Nachr.* **252**, 3–23 (2003) (p. 88)
11. Bañuelos, R., Bogdan, K.: Lévy processes and Fourier multipliers. *J. Funct. Anal.* **250**, 197–213 (2007) (p. 37)
12. Barlow, M.T., Bass, R.F., Chen, Z.-Q., Kaßmann, M.: Non-local Dirichlet forms and symmetric jump processes. *Trans. Am. Math. Soc.* **361**, 1963–1999 (2009) (p. 84, 85)
13. Barndorff-Nielsen, O.E., Levendorskiĭ, S.Z.: Feller processes of normal inverse Gaussian type. *Quant. Financ.* **1**, 318–331 (2001) (p. 51, 74)
14. Bass, R.F.: Markov processes with Lipschitz semigroups. *Trans. Am. Math. Soc.* **267**, 307–320 (1981) (p. 171)
15. Bass, R.F.: Uniqueness in law for pure jump Markov processes. *Probab. Theory Relat. Fields* **79**, 271–287 (1988) (p. 94, 95)
16. Bass, R.F.: Regularity results for stable-like operators. *J. Funct. Anal.* **257**, 2693–2722 (2009) (p. 19)

¹Each reference is followed, in round brackets, by a list of page numbers where we cite it.

17. Bass, R.F., Levin, D.A.: Harnack inequalities for jump processes. *Potential Anal.* **17**, 375–388 (2002) (p. 85)
18. Behme, A., Lindner, A.: On exponential functionals of Lévy processes. *J. Theor. Probab.* (2013). doi:10.1007/s10959-013-0507-y (p. 4, 15, 20, 97)
19. Bendikov, A., Maheux, P.: Nash type inequalities for fractional powers of non-negative self-adjoint operators. *Trans. Am. Math. Soc.* **359**, 3085–3098 (2007) (p. 142)
20. Bensoussan, A., Lions, J.L.: Applications des inéquations variationnelles en contrôle stochastique. Dunod/Bordas, Paris (1978) (p. 72)
21. Bensoussan, A., Lions, J.L.: Contrôle impulsif et inéquations quasi variationnelles. Dunod/Bordas, Paris (1982) (p. 72)
22. Benveniste, A., Jacod, J.: Systèmes de Lévy des processus de Markov. *Invent. Math.* **21**, 183–198 (1973) (p. 65)
23. Berg, C., Forst, G.: Non-symmetric translation invariant Dirichlet forms. *Invent. Math.* **21**, 199–212 (1973) (p. 82)
24. Berg, C., Forst, G.: Potential Theory on Locally Compact Abelian Groups. Springer, Berlin (1975) (p. 4, 40, 42, 43, 44, 62)
25. Berg, C., Christensen, J.P.R., Ressel, P.: Harmonic Analysis on Semigroups. Springer, New York (1984) (p. 45)
26. Berg, C., Boyadzhiev, K., deLaubenfels, R.: Generation of generators of holomorphic semigroups. *J. Aust. Math. Soc. Ser. A* **55**, 246–269 (1993) (p. 103)
27. Bertoin, J.: Lévy Processes. Cambridge University Press, Cambridge (1996) (p. xii, 40, 111)
28. Billingsley, P.: Convergence of Probability Measures. Wiley, New York (1968) (p. 89, 168)
29. Bingham, N.H., Goldie, C.M., Teugels, J.L.: Regular Variation. Cambridge University Press, Cambridge (1989) (p. 33)
30. Bliedtner, J., Hansen, W.: Potential Theory. An Analytic and Probabilistic Approach to Balayage. Springer, Berlin (1986) (p. 10, 11)
31. Blumenthal, R., Gettoor, R.: Some theorems on stable processes. *Trans. Am. Math. Soc.* **95**, 263–273 (1960) (p. xii, 143, 153)
32. Blumenthal, R., Gettoor, R.: Sample functions of stochastic processes with stationary independent increments. *J. Math. Mech.* **10**, 493–516 (1961) (p. xii, 124, 125, 129)
33. Blumenthal, R.M., Gettoor, R.K.: Markov Processes and Potential Theory. Academic, New York (1968) (p. 10)
34. Bochner, S.: Diffusion equation and stochastic processes. *Proc. Natl. Acad. Sci. USA* **35**, 368–370 (1949) (p. 103)
35. Bogachev, V.I.: Measure Theory, vol. 2. Springer, Berlin (2007) (p. 41)
36. Bogachev, V.I., Röckner, M., Schmulland, B.: Generalized Mehler semigroups and applications. *Probab. Theory Relat. Fields* **105**(2), 193–225 (1996) (p. 4)
37. Bogdan, K., Burdzy, K., Chen, Z.-Q.: Censored stable processes. *Probab. Theory Relat. Fields* **127**, 89–152 (2003) (p. 99)
38. Bony, J.-M., Courrège, P., Priouret, P.: Semi-groupes de Feller sur une variété à bord compacte et problème aux limites intégral-différentiels du second ordre donnant lieu au principe du maximum. *Ann. Inst. Fourier* **18.2**, 369–521 (1968) (p. 47)
39. Böttcher, B.: Some investigations on Feller processes generated by pseudo-differential operators. Ph.D. Thesis, University of Wales, Swansea (2004) (p. 72)
40. Böttcher, B.: A parametrix construction for the fundamental solution of the evolution equation associated with a pseudo-differential operator generating a Markov process. *Math. Nachr.* **278**, 1235–1241 (2005) (p. 88)
41. Böttcher, B.: Construction of time inhomogeneous Markov processes via evolution equations using pseudo-differential operators. *J. Lond. Math. Soc.* **78**, 605–621 (2008) (p. 88)
42. Böttcher, B.: Feller processes: The next generation in modeling. Brownian motion, Lévy processes and beyond. *PLoS One* **5**, e15102 (2010) (p. 51, 175)
43. Böttcher, B.: An overshoot approach to recurrence and transience of Markov processes. *Stoch. Process. Appl.* **121**, 1962–1981 (2011) (p. 160, 161, 162, 164)

44. Böttcher, B.: On the construction of Feller processes with unbounded coefficients. *Electron. Commun. Probab.* **16**, 545–555 (2011) (p. 91, 97, 172, 173)
45. Böttcher, B., Schilling, R.L.: Approximation of Feller processes by Markov chains with Lévy increments. *Stoch. Dyn.* **9**, 71–80 (2009) (p. 54, 172, 174)
46. Böttcher, B., Schnurr, A.: The Euler scheme for Feller processes. *Stoch. Anal. Appl.* **29**, 1045–1056 (2011) (p. 76, 175)
47. Böttcher, B., Butko, Y.A., Smolyanov, O.G., Schilling, R.L.: Feynman formulas and path integrals for some evolution equations related to τ -quantization. *Russ. J. Math. Phys.* **18**, 387–399 (2011) (p. 175)
48. Böttcher, B., Schilling, R.L., Wang, J.: Constructions of coupling processes for Lévy processes. *Stoch. Process. Appl.* **121**, 1201–1216 (2011) (p. 147, 152, 153, 155, 156)
49. Bouleau, N., Hirsch, F.: *Dirichlet Forms and Analysis on Wiener Space*. De Gruyter, Berlin (1991) (p. 22, 80)
50. Boyarchenko, S., Levendorskiĭ, S.Z.: Option pricing for truncated Lévy processes. *Int. J. Theor. Appl. Financ.* **3**, 549–552 (2000) (p. 74)
51. Boyarchenko, S., Levendorskiĭ, S.Z.: *Non-Gaussian Merton–Black–Scholes Theory*. World Scientific, Singapore (2002) (p. 74)
52. Breiman, L.: *Probability*. SIAM, Philadelphia (1992) (Unabridged, corrected republication of the 1968 edition, Addison–Wesley, Reading (MA)) (p. 41)
53. Bretagnolle, J.L.: Processus à accroissements indépendants. In: Badrikian, A., Hennequin, P.L. (eds.) *Ecole d’Été de Probabilités: Processus Stochastiques. Lecture Notes in Mathematics*, vol. 307, pp. 1–26. Springer, Berlin (1973) (p. 40)
54. Butko, Y.A., Smolyanov, O.G., Schilling, R.L.: Feynman formulae for Feller semigroups. *Dokl. Math.* **82**, 679–683 (2010) (p. 175)
55. Butko, Y.A., Smolyanov, O.G., Schilling, R.L.: Hamiltonian Feynman–Kac and Feynman formulae for dynamics of particles with position-dependent mass. *Int. J. Theor. Phys.* **50**, 2009–2018 (2011) (p. 175)
56. Butko, Y.A., Smolyanov, O.G., Schilling, R.L.: Lagrangian and Hamiltonian Feynman formulae for some Feller semigroups and their perturbations. *Infinite Dimens. Anal. Quantum Probab. Relat. Top.* **15**, 1250015 (26 pp.) (2012) (p. 175)
57. Butzer, P.L., Berens, H.: *Semi-Groups of Operators and Approximation*. Springer, Berlin (1967) (p. 28)
58. Cancelier, C.: Problèmes aux limites pseudo-différentiels donnant lieu au principe du maximum. *Commun. Partial Differ. Equ.* **11**, 1677–1726 (1986) (p. 88)
59. Chen, M.-F.: *Eigenvalues, Inequalities, and Ergodic Theory*. Springer, London (2005) (p. 141, 147)
60. Chen, Z.-Q.: Symmetric jump processes and their heat kernel estimates. *Sci. China Ser. A Math.* **52**, 1423–1445 (2009) (p. xii, 143)
61. Chen, M.-F., Li, S.: Coupling methods for multidimensional diffusion processes. *Ann. Probab.* **17**, 151–177 (1989) (p. 151)
62. Chen, Z.-Q., Kumagai, T.: Heat kernel estimates for stable-like processes on d -sets. *Stoch. Process. Appl.* **108**, 27–68 (2003) (p. 86)
63. Chen, X., Wang, J.: Weighted Poincaré inequalities for nonlocal Dirichlet forms. Preprint [arXiv: 1207.7140] (2012) (p. 146)
64. Chen, X., Wang, J.: Functional inequalities for nonlocal Dirichlet forms with finite range jumps or large jumps. *Stoch. Process. Appl.* **124**, 123–153 (2014). doi:10.1016/j.spa.2013.07.001 (p. 146)
65. Chen, Z.-Q., Kim, P., Song, R.: Dirichlet heat kernel estimates for $\Delta^{\alpha/2} + \Delta^{\beta/2}$. III. *J. Math.* **54**, 1357–1392 (2010) (p. xii)
66. Chen, Z.-Q., Kim, P., Song, R.: Dirichlet heat kernel estimates for fractional Laplacian under gradient perturbation. *Ann. Probab.* **40**, 2483–2538 (2012) (p. xii)
67. Chung, K.L.: *Lectures from Markov Processes to Brownian Motion*. Springer, Berlin (1982) (p. xii)
68. Chung, K.L., Zhao, Z.: *From Brownian Motion to Schrödinger’s Equation*. Springer, Berlin (2001) (p. xii, 108, 109, 110)

69. Ciesielski, Z., Kerkycharian, G., Roynette, B.: Quelques espaces fonctionnels associés à des processus gaussiens. *Studia Math.* **107**, 171–204 (1993) (p. 136, 139, 140)
70. Çinlar, E., Jacod, J.: Representation of semimartingale Markov processes in terms of Wiener processes and Poisson random measures. In: *Seminar on Stochastic Processes*, pp. 159–242. Birkhäuser, Boston (1981) (p. 63, 67, 77)
71. Çinlar, E., Jacod, J., Protter, P., Sharpe, M.J.: Semimartingales and Markov Processes. *Z. Wahrscheinlichkeitstheor. verw. Geb.* **54**, 161–219 (1980) (p. 63, 66, 67, 77)
72. Cont, R., Tankov, P.: *Financial Modelling with Jump Processes*. Chapman & Hall/CRC, Boca Raton (2004) (p. 172)
73. Courrège, P.: Générateur infinitésimal d'un semi-groupe de convolution sur \mathbb{R}^n , et formule de Lévy–Khinchine. *Bull. Sci. Math.* **88**, 3–30 (1964) (p. 33)
74. Courrège, P.: Sur la forme intégral-différentielle des opérateurs de C_k^∞ dans C satisfaisant au principe du maximum. In: *Séminaire Brelot–Choquet–Deny. Théorie du potentiel*, tome 10, exposé no. 2, pp. 1–38 (1965/1966) (p. 47)
75. Cranston, M., Greven, A.: Coupling and harmonic functions in the case of continuous time Markov processes. *Stoch. Process. Appl.* **60**, 261–286 (1995) (p. 149, 157)
76. Cranston, M., Wang, F.-Y.: A condition for the equivalence of coupling and shift coupling. *Ann. Probab.* **28**, 1666–1679 (2000) (p. 149)
77. Cuppens, R.: *Decomposition of Multivariate Probabilities*. Academic, New York (1975) (p. 44)
78. Davies, B.: *One-Parameter Semigroups*. Academic, London (1980) (p. 7, 17, 23, 24)
79. Davies, E.B.: *Heat Kernels and Spectral Theory*. Cambridge University Press, Cambridge (1990) (p. 141)
80. Davis, M.H.A.: *Markov Models & Optimization*. Chapman & Hall/CRC, London (1993) (p. 26)
81. Davies, E.B., Simon, B.: Ultracontractivity and the heat kernel for Schrödinger operators and Dirichlet Laplacians. *J. Funct. Anal.* **59**, 335–395 (1984) (p. 141)
82. Dautray, R., Lions, J.-L.: *Mathematical Analysis and Numerical Methods for Science and Technology*, vol. 1. Springer, Berlin (1990) (p. 18)
83. de Acosta, A.: Large deviations for vector-valued Lévy processes. *Stoch. Process. Appl.* **51**, 75–115 (1994) (p. 178)
84. Dellacherie, C., Meyer, P.-A.: *Probabilités et potentiel* (tome 4 – chapitres XII à XVI). Hermann, Paris (1987) (p. 6)
85. Demuth, M., van Casteren, J.A.: *Stochastic Spectral Theory for Selfadjoint Feller Operators. A Functional Integration Approach*. Birkhäuser, Basel (2000) (p. 109, 110)
86. Dieudonné, J.: *Foundations of Modern Analysis* (Enlarged and Corrected Printing). Academic, New York (1969) (p. 33)
87. Dorroh, J.R.: Contraction semi-groups in a function space. *Pac. J. Math.* **19**, 35–38 (1966) (p. 100)
88. Dudley, R.M., Norvaiša, R.: *An Introduction to p -Variation and Young Integrals*. MaPhySto Lecture Notes, vol. 1. University of Aarhus, Aarhus (1998) (p. 132)
89. Dudley, R.M., Norvaiša, R.: Differentiability of Six Operators on Nonsmooth Functions and p -Variation. *Lecture Notes in Mathematics*, vol. 1703. Springer, Berlin (1998) (p. 132)
90. Dudley, R.M., Norvaiša, R.: *Concrete Functional Calculus*. Springer, New York (2011) (p. 132)
91. Duffie, D., Filipović, D., Schachermayer, W.: Affine processes and applications in finance. *Ann. Appl. Probab.* **13**, 984–1053 (2003) (p. 5, 20)
92. Duistermaat, J.J., Kolk, J.A.C.: *Distributions. Theory and Applications*. Birkhäuser/Springer, New York (2010) (p. 46)
93. Dunford, N., Schwartz, J.T.: *Linear Operators*, vol. 1. Wiley-Interscience, New York (1957) (p. 1)
94. Duoandikoetxea, J.: *Fourier Analysis*. American Mathematical Society, Providence (2001) (p. 37)

95. Dupuis, C.: Mesure de Hausdorff de la trajectoire de certains processus à accroissements indépendants et stationnaires. In: Dellacherie, C., Meyer, P.A., Weil, M. (eds.) *Séminaire de Probabilités VIII. Lecture Notes in Mathematics*, vol. 381, pp. 40–77. Springer, Berlin (1974) (p. 129)
96. Dynkin, E.B.: *Die Grundlagen der Theorie der Markoffschen Prozesse*. Springer, Berlin (1961) (English translation: *Theory of Markov Processes*, Dover, Mineola (NY), 2006) (p. 28)
97. Dynkin, E.B.: *Markov Processes*, vol. 1. Springer, Berlin (1965) (p. 15, 26, 27, 177)
98. Edwards, R.E.: *Fourier Series. A Modern Introduction*, vol. 2, 2nd edn. Springer, Berlin (1982) (p. 37)
99. El Karoui, N., Lepeltier, J.-P.: Représentation des processus ponctuels multivariés à l’aide d’un processus de Poisson. *Z. Wahrscheinlichkeitstheor. verw. Geb.* **39**, 111–134 (1977) (p. 178)
100. Ethier, S.N., Kurtz, T.G.: *Markov Processes: Characterization and Convergence*. Wiley, New York (1986) (p. 1, 12, 16, 17, 21, 22, 24, 25, 89, 100, 107, 168, 173)
101. Evans, K.P., Jacob, N.: Feller semigroups obtained by variable order subordination. *Rev. Mat. Complut.* **20**, 293–307 (2007) (p. 105)
102. Evans, S.N., Sowers, R.B.: Pinching and twisting Markov processes. *Ann. Probab.* **31**, 486–527 (2003) (p. 99)
103. Falconer, K.: *Fractal Geometry. Mathematical Foundations and Applications*, 2nd edn. Wiley, Chichester (2003) (p. 124)
104. Farkas, W., Jacob, N., Schilling, R.L.: Feller semigroups, L^p -sub-Markovian semigroups, and applications to pseudo-differential operators with negative definite symbols. *Forum Math.* **13**, 51–90 (2001) (p. 73, 83, 85)
105. Farkas, W., Jacob, N., Schilling, R.L.: Function spaces related to continuous negative definite functions: ψ -Bessel potential spaces. *Diss. Math.* **393**, 1–62 (2001) (p. 37, 73, 85)
106. Feller, W.: Zur Theorie der stochastischen Prozesse (Existenz- und Eindeutigkeitssätze). *Math. Ann.* **113**, 113–160 (1936) (p. 86)
107. Feller, W.: On the integro-differential equations of purely discontinuous Markoff processes. *Trans. Am. Math. Soc.* **48**, 488–515 (1940) (p. 86)
108. Feller, W.: The parabolic differential equations and the associated semigroups. *Ann. Math.* **55**, 468–519 (1952) (p. 86)
109. Franke, B.: The scaling limit behaviour of periodic stable-like processes. *Bernoulli* **12**, 551–570 (2006) (p. 164, 185)
110. Franke, B.: Correction to: “The scaling limit behaviour of periodic stable-like processes” [109]. *Bernoulli* **13**, 600 (2007) (p. 164)
111. Freidlin, M.I., Wentzell, A.D.: *Random Perturbations of Dynamical Systems*, 2nd edn. Springer, New York (1998) (p. 178)
112. Fristedt, B.: Sample functions of stochastic processes with stationary, independent increments. In: Ney, P., Port, S. (eds.) *Advances in Probability and Related Topics*, vol. 3, pp. 241–396. Marcel Dekker, New York (1974) (p. xii, 40, 111, 129)
113. Fukushima, M.: *Dirichlet Forms and Markov Processes* (in Japanese). Kinokuniya, Tokyo (1975) (p. 82)
114. Fukushima, M.: On an L^p -estimate of resolvents of Markov processes. *Publ. RIMS Kyoto Univ.* **13**, 277–284 (1977) (p. 29)
115. Fukushima, M.: On a decomposition of additive functionals in the strict sense for a symmetric Markov process. In: Ma, Z.-M., Röckner, M., Yan, J.-A. (eds.) *Dirichlet Forms and Stochastic Processes. Proceedings of the International Conference Held in Beijing, China, 1993*, pp. 155–169. De Gruyter, Berlin (1995) (p. xii, 85)
116. Fukushima, M., Kaneko, H.: (r, p) -capacities for general Markovian semigroups. In: Alberverio, S. (ed.) *Infinite-dimensional Analysis and Stochastic Processes* (Bielefeld 1983). *Research Notes in Mathematics*, vol. 124, pp. 41–47. Pitman, Boston (1985) (p. 29)
117. Fukushima, M., Uemura, T.: Jump-type Hunt processes generated by lower bounded semi-Dirichlet forms. *Ann. Probab.* **40**, 858–889 (2012) (p. 81, 82, 96)

118. Fukushima, M., Oshima, Y., Takeda, M.: *Dirichlet Forms and Symmetric Markov Processes*. De Gruyter, Berlin (1994) (p. 79, 80, 82, 83, 84, 102, 110, 141, 144)
119. Fukushima, M., Oshima, Y., Takeda, M.: *Dirichlet Forms and Symmetric Markov Processes*, 2nd edn. De Gruyter, Berlin (2011) (p. 110)
120. Garroni, M.G., Menaldi, J.L.: Green functions for second order parabolic integro-differential problems. *Research Notes in Mathematics*, vol. 275. Longman, Harlow, Essex (1992) (p. 72)
121. Garsia, A.M., Rodemich, E., Rumsey, H.: A real variable lemma and the continuity of paths of some Gaussian processes. *Indiana Univ. Math. J.* **20**, 565–578 (1970) (p. 136)
122. Gentil, I., Maheux, P.: Super-Poincaré and Nash-type inequalities for subordinated semi-groups. Preprint [arXiv: 1105.3095v2] (2011) (p. 142)
123. Gettoor, R.K.: Transience and recurrence of Markov processes. In: Azéma, J., Yor, M. (eds.) *Séminaire de Probabilités XIV 1978/1979. Lecture Notes in Mathematics*, vol. 784, pp. 397–409. Springer, Berlin (1980) (p. 160)
124. Gomilko, A., Haase, M., Tomilov, Y.: Bernstein functions and rates in mean ergodic theorems for operator semigroups. *J. Anal. Math.* **118**, 545–576 (2012) (p. 103)
125. Gong, F.-Z., Wang, F.-Y.: Functional inequalities for uniformly integrable semigroups and application to essential spectrums. *Forum Math.* **14**, 293–314 (2002) (p. 142)
126. Grafakos, L.: *Classical Fourier Analysis*, 2nd edn. Springer, Berlin (2008) (p. 37)
127. Gross, L.: Logarithmic Sobolev inequalities. *Am. J. Math.* **97**, 1061–1083 (1975) (p. 141, 143)
128. Günter, N.M.: *La théorie du potentiel et ses applications aux problèmes fondamentaux de la physique mathématique* (Collection Borel). Gauthier-Villars, Paris (1934) (p. 18, 186)
129. Günter, N.M.: *Die Potentialtheorie und ihre Anwendung auf Grundaufgaben der mathematischen Physik* (extended German translation of [128]), 2nd edn. B.G. Teubner, Leipzig (1957) (p. 18)
130. Hartman, P., Wintner, A.: On the infinitesimal generators of integral convolutions. *Am. J. Math.* **64**, 273–298 (1942) (p. 155)
131. Hasegawa, M.: A note on the convergence of semi-groups of operators. *Proc. Jpn. Acad.* **40**, 262–266 (1964) (p. 169)
132. Hawkes, J.: Potential theory of Lévy processes. *Proc. Lond. Math. Soc.* **38**, 335–352 (1979) (p. 11)
133. Herren, V.: Lévy type processes and Besov spaces. *Potential Anal.* **7**, 689–704 (1997) (p. 136, 139)
134. Herz, C.S.: *Théorie élémentaire des distributions de Beurling*. Publ. Math. Orsay no. 5, 2ème année 1962/1963, Paris (1964) (p. 47)
135. Hoh, W.: The martingale problem for a class of pseudo differential operators. *Math. Ann.* **300**, 121–147 (1994) (p. 93)
136. Hoh, W.: Pseudo differential operators with negative definite symbols and the martingale problem. *Stoch. Stoch. Rep.* **55**, 225–252 (1995) (p. 74)
137. Hoh, W.: A symbolic calculus for pseudo-differential operators generating Feller semigroups. *Osaka J. Math.* **35**, 798–820 (1998) (p. 44, 51, 72)
138. Hoh, W.: *Pseudo-Differential Operators Generating Markov Processes*. Habilitationsschrift Universität Bielefeld, Bielefeld. http://www.mathematik.uni-bielefeld.de/~hoh/pdo_mp.ps (1998) (p. 11, 47, 51, 54, 57, 62, 72, 73, 74, 90, 93, 94, 96, 107)
139. Hoh, W.: Perturbations of pseudo differential operators with negative definite symbols. *Appl. Anal. Optim.* **45**, 269–281 (2002) (p. 74, 107)
140. Hoh, W., Jacob, N.: On the Dirichlet problem for pseudodifferential operators generating Feller semigroups. *J. Funct. Anal.* **137**, 19–48 (1996) (p. 11, 57)
141. Hörmander, L.: *The Analysis of Linear Partial Differential Operators II*, 1st edn. Springer, Berlin (1983) (p. 61)
142. Hörmander, L.: *The Analysis of Linear Partial Differential Operators I*, 2nd edn. Springer, Berlin (1990) (p. 32, 46)
143. Hörmander, L.: *The Analysis of Linear Partial Differential Operators III*. Springer, Berlin (1994) (p. 51, 72)

144. Hu, Z.-C., Ma, Z.-M., Sun, W.: Extensions of Lévy-Khinchine formula and Beurling–Deny formula in semi-Dirichlet forms setting. *J. Funct. Anal.* **239**, 179–213 (2004) (p. 81)
145. Ikeda, N., Watanabe, S.: On some relations between the harmonic measure and the Lévy measure for a certain class of Markov processes. *J. Math. Kyoto Univ.* **2**, 79–95 (1962) (p. 65)
146. Ikeda, N., Watanabe, S.: *Stochastic Differential Equations and Diffusion Processes*, 2nd edn. North-Holland/Kodansha, Amsterdam/Tokyo (1989) (p. 75, 107)
147. Ikeda, N., Nagasawa, M., Watanabe, S.: A construction of Markov processes by piecing out. *Proc. Jpn. Acad.* **42**, 370–375 (1966) (p. 99)
148. Imkeller, P., Willrich, N.: Solutions of martingale problems for Lévy-type operators and stochastic differential equations driven by Lévy processes with discontinuous coefficients. Preprint [arXiv: 1208.1665] (2012) (p. 90)
149. Itô, K.: *Lectures on Stochastic Processes*. Tata Institute of Fundamental Research/Springer, Bombay/Berlin (1961/1984) (p. 18)
150. Itô, K.: Semigroups in probability theory. In: Komatsu, H. (ed.) *Functional Analysis and Related Topics*, 1991. Proceedings of the International Conference in Memory of Professor Kosaku Yosida held at RIMS, Kyoto University, Japan, 1991, pp. 69–83. *Lecture Notes in Mathematics*, vol. 1540. Springer, Berlin (1993) (p. 17)
151. Itô, S.: *Diffusion Equations*. American Mathematical Society, Providence (1992) (p. 4)
152. Jacob, N.: Feller semigroups, Dirichlet forms, and pseudo differential operators. *Forum Math.* **4**, 433–446 (1992) (p. 52)
153. Jacob, N.: A class of Feller semigroups generated by pseudo differential operators. *Math. Z.* **215**, 151–166 (1994) (p. 74)
154. Jacob, N.: Non-local (semi-)Dirichlet forms generated by pseudo differential operators. In: Ma, Z.-M., Röckner, M., Yan, J.-A. (eds.) *Dirichlet Forms and Stochastic Processes*. Proceedings of the International Conference Held in Beijing, China, 1993. De Gruyter, Berlin (1995) (p. 84)
155. Jacob, N.: *Pseudo Differential Operators and Markov Processes*. Akademie, Berlin (1996) (p. 51)
156. Jacob, N.: Characteristic functions and symbols in the theory of Feller processes. *Potential Anal.* **8**, 61–68 (1998) (p. 57, 58)
157. Jacob, N.: *Pseudo Differential Operators and Markov Processes I: Fourier Analysis and Semigroups*. Imperial College Press/World Scientific, London (2001) (p. 11, 22, 40, 44, 51, 60, 61, 73, 80, 82)
158. Jacob, N.: *Pseudo Differential Operators and Markov Processes II: Generators and Their Potential Theory*. Imperial College Press/World Scientific, London (2002) (p. 51, 70, 71, 72, 73, 87, 106, 107)
159. Jacob, N.: *Pseudo Differential Operators and Markov Processes III: Markov Processes and Applications*. Imperial College Press/World Scientific, London (2005) (p. 16, 51, 89, 160)
160. Jacob, N., Schilling, R.L.: Estimates for Feller semigroups generated by pseudodifferential operators. In: *Function Spaces, Differential Operators and Nonlinear Analysis*. Proceedings of the International Conference Paseky nad Jizerou, September 1995, pp. 27–49. Prometheus Publishing House, Prague (1996) (p. 104, 105)
161. Jacob, N., Schilling, R.L.: Subordination in the sense of S. Bochner – an approach through pseudo differential operators. *Math. Nachr.* **178**, 199–231 (1996) (p. 104)
162. Jacob, N., Schilling, R.L.: An analytic proof of the Lévy-Khinchin formula on \mathbb{R}^n . *Publ. Math. Debrecen* **53**, 69–89 (1998) (p. 33, 92)
163. Jacob, N., Schilling, R.L.: Lévy-type processes and pseudo differential operators. In: Barndorff-Nielsen, O.E., Mikosch, T., Resnick, S.I. (eds.) *Lévy Processes: Theory and Applications*, pp. 139–168. Birkhäuser, Boston (2001) (p. 104)
164. Jacob, N., Schilling, R.L.: Function spaces as Dirichlet spaces (about a paper by Maz'ya and Nagel). *Z. Anal. Anw.* **24**, 3–28 (2005) (p. 155)
165. Jacob, N., Schilling, R.L.: Towards an L^p potential theory for sub-Markovian semigroups: kernels and capacities. *Acta Math. Sinica* **22**, 1227–1250 (2006) (p. 30, 37, 85)

166. Jacob, N., Schilling, R.L.: On a Poincaré-type inequality for energy forms in L^p . *Mediterr. J. Math.* **4**, 33–44 (2007) (p. 30)
167. Jacob, N., Schilling, R.L.: Extended L^p Dirichlet spaces. In: Laptev, A. (ed.) *Around the Research of Vladimir Maz'ya – vol. 1: Function Spaces*, pp. 221–238. Springer, Berlin (2009) (p. 30)
168. Jacob, N., Knopova, V., Landwehr, S., Schilling, R.L.: A geometric interpretation of the transition density of a symmetric Lévy process. *Sci. China Ser. A Math.* **55**, 1099–1126 (2012) (p. xiii)
169. Jacod, J.: *Calcul Stochastique et Problèmes de Martingales*. Lecture Notes in Mathematics, vol. 714. Springer, Berlin (1979) (p. 178)
170. Jacod, J., Shiryaev, A.N.: *Limit Theorems for Stochastic Processes*, 2nd edn. Springer, Berlin (2003) (p. 40, 64, 89, 90, 168)
171. Jonsson, A., Wallin, H.: *Function Spaces on Subsets of \mathbb{R}^n* (Mathematical Reports, vol. 2, Part 1). Harwood Academic, Chur (1984) (p. 135)
172. Kallenberg, O.: *Foundations of Modern Probability*, 2nd edn. Springer, New York (2004) (p. 89, 168)
173. Kato, T.: *Perturbation Theory for Linear Operators*. Springer, Berlin (1995) (p. 74)
174. Kazumi, T., Shigekawa, I.: Measures of finite (r, p) -energy and potentials on separable metric spaces. In: Azéma, J., Meyer, P.-A., Yor, M. (eds.) *Séminaire de Probabilités 26*, pp. 415–444. Lecture Notes in Mathematics, vol. 1526. Springer, Berlin (1992) (p. 85)
175. Keller-Ressel, M.: *Affine processes—contributions to theory and applications*. Ph.D. Thesis, TU Wien (2008) (p. 5)
176. Keller-Ressel, M., Schachermayer, W., Teichmann, J.: Affine processes are regular. *Probab. Theory Relat. Fields* **151**, 591–611 (2011) (p. 5, 20)
177. Keller-Ressel, M., Schachermayer, W., Teichmann, J.: Regularity of affine processes on general state spaces. *Electron. J. Probab.* **18**, 1–17 (2013) (p. 20)
178. Khintchine, A.I.: Sur la croissance locale des processus stochastiques homogènes à accroissements indépendants (Russian, French summary). *Izvest. Akad. Nauk SSSR, Ser. Math.* **3**, 487–508 (1939) (p. 129)
179. Khoshnevisan, D., Xiao, Y.: Lévy process: capacity and Hausdorff dimension. *Ann. Probab.* **33**, 841–878 (2005) (p. 125)
180. Khoshnevisan, D., Xiao, Y., Zhong, Y.: Measuring the range of an additive Lévy process. *Ann. Probab.* **31**, 1097–1141 (2003) (p. 124)
181. Kikuchi, K., Negoro, A.: On Markov process generated by pseudodifferential operator of variable order. *Osaka J. Math* **34**, 319–335 (1997) (p. 73)
182. Knopova, V., Schilling, R.L.: On the small-time behaviour of Lévy-type processes (2013) (p. 179)
183. Knopova, V., Schilling, R.L.: Transition density estimates for a class of Lévy and Lévy-type processes. *J. Theor. Probab.* **25**, 144–170 (2012) (p. 122)
184. Knopova, V., Schilling, R.L.: A note on the existence of transition probability densities for Lévy processes. *Forum Math.* **25**, 125–149 (2013) (p. 155)
185. Kochubei, A.N.: Parabolic pseudodifferential equations, hypersingular integrals and Markov processes. *Math. USSR Izv.* **33**, 233–259 (1989) (p. 87)
186. Kolmogoroff, A.N.: Über die analytischen Grundlagen der Wahrscheinlichkeitsrechnung. *Math. Ann.* **104**, 415–458 (1931) (English translation in [187]). (p. 86)
187. Kolmogorov, A.N.: *Selected Works of A. N. Kolmogorov. Volume II: Probability Theory and Mathematical Statistics*. Kluwer Academic, Dordrecht (1992) (p. 86, 188)
188. Kolokoltsov, V.N.: *Semiclassical Analysis for Diffusions and Stochastic Processes*. Lecture Notes in Mathematics, vol. 1724. Springer, Berlin (2000) (p. 88)
189. Kolokoltsov, V.N.: Symmetric stable laws and stable-like jump-diffusions. *Proc. Lond. Math. Soc.* **80**, 725–768 (2000) (p. 87)
190. Kolokoltsov, V.N.: *Nonlinear Markov Processes and Kinetic Equations*. Cambridge University Press, Cambridge (2010) (p. 96)

191. Kolokoltsov, V.N.: Markov Processes, Semigroups and Generators. De Gruyter, Berlin (2011) (p. 88)
192. Kolokoltsov, V.N., Schilling, R.L., Tyukov, A.E.: Transience and non-explosion of certain stochastic Newtonian systems. *Electron. J. Probab.* **7**, 1–19 (2002) (p. 163, 165)
193. Komatsu, T.: Continuity estimates for solutions of parabolic equations associated with jump type Dirichlet forms. *Osaka J. Math.* **25**, 697–728 (1988) (p. 86)
194. Kumano-go, H.: Pseudo-Differential Operators. MIT, Cambridge (1981) (p. 51, 72, 89)
195. Kunita, H.: Stochastic Flows and Stochastic Differential Equations. Cambridge University Press, Cambridge (1990) (p. 75)
196. Kunita, H.: Stochastic differential equations based on Lévy processes and stochastic flows of diffeomorphisms. In: *Real and Stochastic Analysis. New Perspectives*, pp. 305–373. Birkhäuser, Boston (2004) (p. 75)
197. Kurtz, T.G.: Equivalence of stochastic equations and martingale problems. In: Crisan, D. (ed.) *Stochastic Analysis 2010 (7th ISAAC Congress, London, July 2009)*, pp. 113–130. Springer, Berlin (2011) (p. 90)
198. Kyprianou, A.E.: *Introductory Lectures on Fluctuations of Lévy Processes with Applications*. Springer, Berlin (2006) (p. 40)
199. Langer, H.: A class of infinitesimal generators of one-dimensional Markov processes. *J. Math. Soc. Jpn.* **28**, 242–249 (1976) (p. xiii)
200. Langer, H., Partzsch, L., Schütze, D.: Über verallgemeinerte gewöhnliche Differentialoperatoren mit nichtlokalen Randbedingungen und die von ihnen erzeugten Markov-Prozesse. *Publ. Res. Inst. Math. Sci.* **7**, 659–702 (1971/1972) (p. xiii)
201. Larsen, R.: *An Introduction to the Theory of Multipliers*. Springer, Berlin (1971) (p. 37)
202. Lescot, P., Röckner, M.: Perturbations of generalized Mehler semigroups and applications to stochastic heat equations with Lévy noise and singular drift. *Potential Anal.* **20**, 317–344 (2004) (p. 143)
203. Lin, H.N., Wang, J.: Successful couplings for a class of stochastic differential equations driven by Lévy processes. *Sci. China Ser. A Math.* **55**, 1737–1748 (2012) (p. 159)
204. Lindvall, T.: *Lectures on the Coupling Method*. Wiley, New York (1992) (p. 147, 157)
205. Lindvall, T., Rogers, L.C.G.: Coupling of multidimensional diffusions by reflection. *Ann. Probab.* **14**, 860–872 (1986) (p. 151)
206. Lindvall, T., Rogers, L.C.G.: On coupling of random walks and renewal processes. *J. Appl. Probab.* **33**, 122–126 (1996) (p. 148, 150)
207. Liptser, R.S., Pukhalskii, A.A.: Limit theorems on large deviations for semimartingales. *Stoch. Stoch. Rep.* **38**, 201–249 (1992) (p. 178)
208. Loève, M.: *Probability Theory II*, 4th edn. Springer, New York (1978) (p. 177)
209. Lumer, G.: Perturbation de générateurs infinitésimaux du type changement de temps. *Ann. Inst. Fourier* **23**, 271–279 (1973) (p. 100)
210. Ma, Z.-M., Röckner, M.: *An Introduction to the Theory of (Non-Symmetric) Dirichlet Forms*. Springer, Berlin (1992) (p. xii, 74, 79, 80, 82)
211. Ma, Z.-M., Overbeck, L., Röckner, M.: Markov processes associated with semi-Dirichlet forms. *Osaka J. Math.* **32**, 97–119 (1995) (p. 82, 83)
212. Ma, Z.-M., Röckner, M., Zhang, T.-S.: Approximation of arbitrary Dirichlet processes by Markov chains. *Ann. Inst. Henri Poincaré* **34**, 1–22 (1998) (p. 171)
213. Ma, Z.-M., Röckner, M., Sun, W.: Approximation of Hunt processes by multivariate Poisson processes. *Acta Appl. Math.* **63**, 233–245 (2000) (p. 171)
214. Mackevičius, V.: Weak convergence of random processes in spaces $D[0, \infty)(X)$. *Lith. Math. J.* **14**, 620–623 (1974) (p. 168)
215. Malliavin, P.: *Stochastic Analysis*. Springer, Berlin (1997) (p. 29)
216. Mandl, P.: *Analytical Treatment of One-Dimensional Markov Processes*. Springer, Berlin (1968) (p. xiii)
217. Manstavičius, M.: p -variation of strong Markov processes. *Ann. Probab.* **32**, 2053–2066 (2004) (p. 132)

218. Manstavičius, M.: A non-Markovian process with unbounded p -variation. *Electron. Commun. Probab.* **10**, 17–28 (2005) (p. 132)
219. Masamune, J., Uemura, T.: Conservation property of symmetric jump processes. *Ann. Inst. H. Poincaré Probab. Statist.* **47**, 650–662 (2011) (p. 57)
220. Masamune, J., Uemura, T., Wang, J.: On the conservativeness and the recurrence of symmetric jump-diffusions. *J. Funct. Anal.* **263**, 3984–4008 (2012) (p. 57)
221. Meyer, P.-A.: Renaissance, recollements, mélanges, ralentissement de processus de Markov. *Ann. Inst. Fourier* **25**, 464–497 (1975) (p. 99, 107)
222. Meyer, P.A., Smythe, R.T., Walsh, J.B.: Birth and death of Markov processes. In: Le Cam, L.M., Neyman, J., Scott, E.L. (eds.) *Proceedings of the Sixth Berkeley Symposium on Mathematical Statistics and Probability* (University of California, Berkeley, 1970/1971). Volume III: Probability Theory, pp. 295–305. University of California Press, Berkeley (1972) (p. 99)
223. Meyn, S.P., Tweedie, R.L.: Stability of Markovian processes I: Criteria for discrete-time chains. *Adv. Appl. Probab.* **24**, 542–574 (1992) (p. 160)
224. Meyn, S.P., Tweedie, R.L.: A survey of Foster-Lyapunov techniques for general state space Markov processes. In: *Proceedings of the Workshop on Stochastic Stability and Stochastic Stabilization*, Metz, France, 1993 (1993) (p. 160)
225. Meyn, S.P., Tweedie, R.L.: Stability of Markovian processes II: Continuous-time processes and sampled chains. *Adv. Appl. Probab.* **25**, 487–517 (1993) (p. 160)
226. Meyn, S.P., Tweedie, R.L.: Stability of Markovian processes III: Foster-Lyapunov criteria for continuous-time processes. *Adv. Appl. Probab.* **25**, 518–548 (1993) (p. 26, 160, 162)
227. Meyn, S.P., Tweedie, R.L.: *Markov Chains and Stochastic Stability*, 2nd edn. Cambridge University Press, Cambridge (2009) (p. 160)
228. Millar, P.W.: Path behavior of processes with stationary independent increments. *Z. Wahrscheinlichkeitstheor. verw. Geb.* **17**, 53–73 (1971) (p. 124)
229. Mouhot, C., Russ, E., Sire, Y.: Fractional Poincaré inequalities for general measures. *J. Math. Pure Appl.* **95**, 72–84 (2011) (p. 146)
230. Nagasawa, M.: Note on pasting of two Markov processes. In: Meyer, P.A. (ed.) *Séminaire de Probabilités X. Lecture Notes in Mathematics*, vol. 511, pp. 532–535. Springer, Berlin (1976) (p. 99)
231. Nash, J.: Continuity of solutions of parabolic and elliptic equations. *Am. J. Math.* **80**, 931–954 (1958) (p. 86)
232. Nelson, E.: A functional analytic approach using singular Laplace integrals. *Trans. Am. Math. Soc.* **88**, 400–413 (1958) (p. 103)
233. Nelson, E.: The free Markov Field. *J. Funct. Anal.* **12**, 211–227 (1973) (p. 141)
234. Oshima, Y.: *Dirichlet Spaces – Lecture Notes*, Universität Erlangen–Nürnberg, Summer Term 1988. Erlangen (1988) (p. 79, 160)
235. Oshima, Y.: *Semi-Dirichlet Forms and Markov Processes*. De Gruyter, Berlin (2013) (p. 79)
236. Pazy, A.: *Semigroups of Linear Operators and Applications to Partial Differential Equations*. Springer, New York (1983) (p. 8, 17, 23, 84, 107)
237. Peetre, J.: Réctification à l'article “Une caractérisation abstraite des opérateurs différentiels”. *Math. Scand.* **8**, 116–120 (1960) (p. 27)
238. Port, S., Stone, C.: *Brownian Motion and Classical Potential Theory*. Academic, New York (1978) (p. xii)
239. Potrykus, A.: A symbolic calculus and a parametrix construction for pseudodifferential operators with non-smooth negative definite symbols. *Rev. Mat. Complut.* **22**, 187–207 (2009) (p. 74)
240. Potrykus, A.: Pseudodifferential operators with rough negative definite symbols. *Integral Equ. Oper. Theory* **66**, 441–461 (2010) (p. 74)
241. Priola, E., Zabczyk, J.: Liouville theorems for non-local operators. *J. Funct. Anal.* **216**, 455–490 (2004) (p. 157)
242. Priola, E., Zabczyk, J.: Densities for Ornstein–Uhlenbeck processes with jumps. *Bull. Lond. Math. Soc.* **41**, 41–50 (2009) (p. 157)

243. Protter, P.: Stochastic Integration and Differential Equations, 2nd edn. Springer, Berlin (2004) (p. 16, 40, 75, 132)
244. Pruitt, W.E.: The Hausdorff dimension of the range of a process with stationary independent increments. *Indiana J. Math.* **19**, 371–378 (1969) (p. 124)
245. Pruitt, W.E.: The growth of random walks and Lévy processes. *Ann. Probab.* **9**, 948–956 (1981) (p. 112, 125)
246. Pustyl'nik, E.I.: On functions of a positive operator. *Math. USSR Sbornik* **47**, 27–42 (1984) (p. 103)
247. Rao, M.M., Ren, Z.D.: Theory of Orlicz Spaces. Marcel Dekker, New York (1991) (p. 11)
248. Reed, M., Simon, B.: Functional Analysis, vol. 1, 2nd edn. Academic, San Diego (1980) (p. 8, 39, 41)
249. Revuz, D.: Markov Chains, 2nd edn. North-Holland, Amsterdam (1984) (p. 11)
250. Revuz, D., Yor, M.: Continuous Martingales and Brownian Motion, 3rd edn. Springer, Berlin (2005) (p. 6, 15, 16)
251. Röckner, M., Wang, F.-Y.: Weak Poincaré Inequalities and L^2 -Convergence Rates of Markov Semigroups. *J. Funct. Anal.* **185**, 564–603 (2001) (p. 141)
252. Röckner, M., Wang, F.-Y.: Harnack and functional inequalities for generalized Mehler semigroups. *J. Funct. Anal.* **203**, 237–261 (2003) (p. 143)
253. Rogers, C.A.: Hausdorff Measures. Cambridge University Press, Cambridge (1970) (p. 124)
254. Rogers, L.C.G., Williams, D.: Diffusions, Markov Processes, and Martingales (vol. 2: Itô Calculus). Wiley, New York (1987) (p. 102)
255. Rogers, L.C.G., Williams, D.: Diffusions, Markov Processes, and Martingales (vol. 1: Foundations), 2nd edn. Wiley, New York (1994) (p. 2, 22)
256. Rosenbaum, M.: First order p -variations and Besov spaces. *Stat. Probab. Lett.* **79**, 55–62 (2009) (p. 140)
257. Roynette, B.: Mouvement brownien et espaces de Besov. *Stoch. Stoch. Rep.* **43**, 221–260 (1993) (p. 136)
258. Rudin, W.: Real and Complex Analysis, 3rd edn. McGraw Hill, New York (1986) (p. 7)
259. Rudin, W.: Functional Analysis, 2nd edn. McGraw Hill, New York (1991) (p. 32, 60)
260. Runst, T., Sickel, W.: Sobolev Spaces of Fractional Order, Nemytskij Operators, and Nonlinear Partial Differential Equations. De Gruyter, Berlin (1996) (p. 135, 137)
261. Ruzhansky, M., Turunen, V.: Pseudo-Differential Operators and Symmetries. Background Analysis and Advanced Topics. Birkhäuser, Basel (2010) (p. 51)
262. Saloff-Coste, L.: Aspects of Sobolev-Type Inequalities. London Mathematical Society Lecture Notes Series, vol. 289. Cambridge University Press, Cambridge (2002) (p. 141)
263. Sandrić, N.: Recurrence and transience property for a class of Markov chains. *Bernoulli* (2014) (p. 164)
264. Sandrić, N.: Long-time behavior of stable-like processes. *Stoch. Process. Appl.* **123**, 1276–1300 (2013) (p. 162, 164)
265. Sandrić, N.: Recurrence and transience property for two cases of stable-like Markov chains. *J. Theor. Probab.* (2013). doi:10.1007/s10959-012-0445-0 (p. 164)
266. Sasvári, Z.: Multivariate Characteristic and Correlation Functions. De Gruyter, Berlin (2013) (p. 41)
267. Sato, K.: Lévy Processes and Infinitely Divisible Distributions. Cambridge University Press, Cambridge (1999) (p. 18, 19, 33, 40, 44, 111, 121, 129)
268. Sato, K., Yamazato, M.: Operator-selfdecomposable distributions as limit distributions of processes of Ornstein-Uhlenbeck type. *Stoch. Process. Appl.* **17**, 73–100 (1984) (p. 4, 19)
269. Savov, M.: Small time two-sided LIL behavior for Lévy processes at zero. *Probab. Theory Relat. Fields* **144**, 79–98 (2009) (p. 129)
270. Sawyer, S.A.: A formula for semigroups, with an application to branching diffusion processes. *Trans. Am. Math. Soc.* **152**, 1–38 (1970) (p. 99)
271. Schilling, R.L.: When does a càdlàg process have continuous sample paths? *Expo. Math.* **12**, 255–261 (1994) (p. 28)

272. Schilling, R.L.: On the domain of the generator of a subordinate semigroup. In: Král, J., Lukeš, J., Netuka, I., Veselý, J. (eds.) *Potential Theory – ICPT 94. Proceedings of the International Conference on Potential Theory, Kouty (CR) 1994*, pp. 449–462. De Gruyter, Berlin (1996) (p. 103)
273. Schilling, R.L.: On Feller processes with sample paths in Besov spaces. *Math. Ann.* **309**, 663–675 (1997) (p. 136, 139, 140)
274. Schilling, R.L.: Conservativeness and extensions of Feller semigroups. *Positivity* **2**, 239–256 (1998) (p. 9, 55, 56, 57, 114)
275. Schilling, R.L.: Conservativeness of semigroups generated by pseudo differential operators. *Potential Anal.* **9**, 91–104 (1998) (p. 56, 58)
276. Schilling, R.L.: Feller processes generated by pseudo-differential operators: on the Hausdorff dimension of their sample paths. *J. Theor. Probab.* **11**, 303–330 (1998) (p. 127)
277. Schilling, R.L.: Growth and Hölder conditions for the sample paths of Feller processes. *Probab. Theory Relat. Fields* **112**, 565–611 (1998) (p. 39, 61, 65, 112, 117, 125, 126, 129, 131)
278. Schilling, R.L.: Subordination in the sense of Bochner and a related functional calculus. *J. Aust. Math. Soc. Ser. A* **64**, 368–396 (1998) (p. 103)
279. Schilling, R.L.: Function spaces as path spaces of Feller processes. *Math. Nachr.* **217**, 147–174 (2000) (p. 138)
280. Schilling, R.L.: Sobolev embedding for stochastic processes. *Expo. Math.* **18**, 239–242 (2000) (p. 136)
281. Schilling, R.L.: Dirichlet operators and the positive maximum principle. *Integral Equ. Oper. Theory* **41**, 74–92 (2001) (p. 22, 80, 84)
282. Schilling, R.L.: A note on invariant sets. *Probab. Math. Stat.* **24**, 47–66 (2004) (p. 81)
283. Schilling, R.L.: *Measures, Integrals and Martingales*. Cambridge University Press, Cambridge (2005) (p. 3, 12)
284. Schilling, R.L., Partzsch, L.: *Brownian Motion. An Introduction to Stochastic Processes*. De Gruyter, Berlin (2012) (p. 4, 17, 18, 21, 22, 26, 27, 28, 36, 75, 76, 123, 132)
285. Schilling, R.L., Schnurr, A.: The symbol associated with the solution of a stochastic differential equation. *Electron. J. Probab.* **15**, 1369–1393 (2010) (p. 55, 56, 59, 61, 63, 64, 76, 126)
286. Schilling, R.L., Uemura, T.: On the Feller property of Dirichlet forms generated by pseudo-differential operators. *Tohoku Math. J.* **59**, 401–422 (2007) (p. 63, 81, 85, 96)
287. Schilling, R.L., Wang, J.: On the coupling property of Lévy processes. *Ann. Inst. Henri Poincaré Probab. Stat.* **47**, 1147–1159 (2011) (p. 147, 148, 150)
288. Schilling, R.L., Wang, J.: Lower bounded semi-Dirichlet forms associated with Lévy type operators. Preprint [arXiv: 1108.3499] 18 pp. (2012) (p. 81, 96)
289. Schilling, R.L., Wang, J.: On the coupling property and the Liouville theorem for Ornstein–Uhlenbeck processes. *J. Evol. Equ.* **12**, 119–140 (2012) (p. 142, 147, 149, 150, 156, 158)
290. Schilling, R.L., Wang, J.: Strong Feller continuity of Feller processes and semigroups. *Infinite Dimens. Anal. Quantum Probab. Relat. Top.* **15**, 1250010 (28 pp.) (2012) (p. 11, 12, 59)
291. Schilling, R.L., Wang, J.: Some theorems on Feller processes: transience, local times and ultracontractivity. *Trans. Am. Math. Soc.* **365**, 3255–3286 (2013) (p. 67)
292. Schilling, R.L., Sztonyk, P., Wang, J.: Coupling property and gradient estimates of Lévy processes via the symbol. *Bernoulli* **18**, 1128–1149 (2011) (p. 147, 155)
293. Schilling, R.L., Song, R., Vondraček, Z.: *Bernstein Functions: Theory and Applications*, 2nd edn. De Gruyter, Berlin (2012) (p. 35, 45, 103, 104, 107, 142)
294. Schnurr, A.: The symbol of a Markov semimartingale. Ph.D. thesis, TU Dresden, Aachen (2009) (p. 61, 63, 65, 77)
295. Schnurr, A.: On the semimartingale nature of Feller processes with killing. *Stoch. Process. Appl.* **122**, 2758–2780 (2012) (p. 61, 63, 65)
296. Schnurr, A.: Generalization of the Blumenthal–Gettoor index to the class of homogeneous diffusions with jumps and some applications. *Bernoulli* (2013, to appear) (p. 65)

297. Sharpe, M.: Zeroes of infinitely divisible densities. *Ann. Math. Stat.* **40**, 1503–1505 (1969) (p. 153)
298. Sharpe, M.: *General Theory of Markov Processes*. Academic, London (1988) (p. xii, 102)
299. Shieh, N.-R., Xiao, Y.: Hausdorff and parking dimensions of the images of random fields. *Bernoulli* **16**, 926–952 (2010) (p. 127)
300. Shiozawa, Y., Takeda, M.: Variational formula for Dirichlet forms and estimates of principal eigenvalues for symmetric α -stable processes. *Potential Anal.* **23**, 135–151 (2005) (p. 178)
301. Silverstein, M.L.: *Symmetric Markov Processes*. Lecture Notes in Mathematics, vol. 426. Springer, Berlin (1974) (p. 82)
302. Situ, R.: *Theory of Stochastic Differential Equations with Jumps and Applications: Mathematical and Analytical Techniques with Applications to Engineering*. Springer, New York (2005) (p. 75)
303. Skorokhod, A.V.: Limit theorems for stochastic processes. *Theory Probab. Appl.* **1**, 261–290 (1956) (p. 89, 168)
304. Skorokhod, A.V.: *Studies in the Theory of Random Processes*. Addison–Wesley, Reading (1965) (p. 177)
305. Skorokhod, A.V.: *Random Processes with Independent Increments*. Kluwer, Dordrecht (1991) (p. 129)
306. Song, R., Vondraček, Z.: Harnack inequalities for some classes of Markov processes. *Math. Z.* **246**, 177–202 (2004) (p. 85)
307. Stein, E.M.: *Topics in Harmonic Analysis Related to the Littlewood–Paley Theory*. Annals of Mathematics Studies, vol. 63. Princeton University Press, Princeton (1970) (p. 30)
308. Strang, G.: Approximating semigroups and the consistency of difference schemes. *Proc. Am. Math. Soc.* **20**, 1–7 (1969) (p. 167, 168)
309. Stroock, D.W.: Diffusion processes associated with Lévy generators. *Probab. Theory Relat. Fields* **32**, 209–244 (1975) (p. 72, 90)
310. Stroock, D.W.: Diffusion semigroups corresponding to uniformly elliptic divergence form operators. In: Azéma, J., Meyer, P.A., Yor, M. (eds.) *Séminaire de Probabilités XXII*. Lecture Notes in Mathematics, vol. 1321, pp. 316–347. Springer, Berlin (1988) (p. 4, 5)
311. Stroock, D.W.: *Markov Processes from K. Itô's Perspective*. Princeton University Press, Princeton (2003) (p. 78, 93, 94)
312. Stroock, D.W., Varadhan, S.R.S.: *Multidimensional Diffusion Processes*. Springer, Berlin (1979) (p. 56, 57, 75, 76, 89)
313. Taira, K.: *Diffusion Processes and Partial Differential Equations*. Academic, Boston (MA) (1988) (p. xiii, 72)
314. Taira, K.: On the existence of Feller semigroups with discontinuous coefficients. *Acta Math. Sinica* **22**, 595–606 (2006) (p. 71)
315. Takeda, M.: On a large deviation for symmetric Markov processes with finite lifetime. *Stoch. Stoch. Rep.* **59**, 143–167 (1996) (p. 178)
316. Takeda, M.: A large deviation principle for symmetric Markov processes with Feynman–Kac functional. *J. Theor. Probab.* **24**, 1097–1129 (2011) (p. 178)
317. Taylor, M.E.: *Pseudodifferential Operators*, 2nd edn. Princeton University Press, Princeton (1981) (p. 51)
318. Taylor, S.J.: Sample path properties of processes with stationary independent increments. In: Kendall, D.G., Harding, E.F. (eds.) *Stochastic Analysis*, pp. 387–414. Wiley, London (1973) (p. 40, 111)
319. Thorisson, H.: Shift-coupling in continuous time. *Probab. Theory Relat. Fields* **99**, 477–483 (1994) (p. 147)
320. Thorisson, H.: *Coupling, Stationarity, and Regeneration*. Springer, New York (2000) (p. 147)
321. Triebel, H.: *Theory of Function Spaces*. Birkhäuser, Basel (1983) (p. 135)
322. Triebel, H.: *Theory of Function Spaces II*. Birkhäuser, Basel (1992) (p. 135)
323. Triebel, H.: *Interpolation Theory, Function Spaces, Differential Operators*, 2nd edn. Johann Ambrosius Barth, Heidelberg (1995) (p. 135)
324. Triebel, H.: *Theory of Function Spaces III*. Birkhäuser, Basel (2006) (p. 135, 139)

325. Trotter, H.F.: Approximation of semi-groups of operators. *Pac. J. Math* **8**, 887–919 (1958) (p. 169)
326. Tsuchiya, M.: Lévy measure with generalized polar decomposition and the associated SDE with jumps. *Stoch. Stoch. Rep.* **38**, 95–117 (1992) (p. 78, 94)
327. Tweedie, R.L.: Topological conditions enabling use of Harris methods in discrete and continuous time. *Acta Appl. Math.* **34**, 175–188 (1994) (p. 161)
328. Uemura, T.: On some path properties of symmetric stable-like processes for one dimension. *Potential Anal.* **16**, 79–91 (2002) (p. 96, 164)
329. Uemura, T.: On symmetric stable-like processes: some path properties and generators. *J. Theor. Probab.* **17**, 541–555 (2004) (p. 96, 164)
330. Uemura, T., Shiozawa, Y.: Explosion of jump-type symmetric Dirichlet forms on \mathbb{R}^d . *J. Theor. Probab.* (2012). doi:10.1007/s10959-012-0424-5 (p. 57)
331. van Casteren, J.A.: *Markov Processes, Feller Semigroups and Evolution Equations*. World Scientific, New Jersey (2011) (p. 52, 96, 110)
332. Varopoulos, N.T., Saloff-Coste, L., Coulhon, T.: *Analysis and Geometry on Groups*. Cambridge University Press, Cambridge (1992) (p. 141)
333. Waldenfels, W.v.: Eine Klasse stationärer Markowprozesse. *Kernforschungsanlage Jülich, Institut für Plasmaphysik, Jülich* (1961) (p. 47)
334. Waldenfels, W.v.: Positive Halbgruppen auf einem n -dimensionalen Torus. *Arch. Math.* **15**, 191–203 (1964) (p. 47)
335. Waldenfels, W.v.: Fast positive Operatoren. *Z. Wahrscheinlichkeitstheor. verw. Geb.* **4**, 159–174 (1965) (p. 47)
336. Wang, F.-Y.: Functional inequalities for empty essential spectrum. *J. Funct. Anal.* **170**, 219–245 (2000) (p. 142)
337. Wang, F.-Y.: Functional inequalities, semigroup properties and spectrum estimates. *Infinite Dimens. Anal. Quantum Probab. Relat. Top.* **3**, 263–295 (2000) (p. 142)
338. Wang, F.-Y.: Functional inequalities for the decay of sub-Markov semigroups. *Potential Anal.* **18**, 1–23 (2003) (p. 141)
339. Wang, F.-Y.: Functional inequalities on abstract Hilbert spaces and applications. *Math. Z.* **246**, 359–371 (2004) (p. 142)
340. Wang, F.-Y.: *Functional Inequalities, Markov Processes and Spectral Theory*. Science Press, Beijing (2005) (p. 30, 141, 143)
341. Wang, F.-Y.: Functional inequalities for Dirichlet forms with fractional powers. *Chin. Sci. Tech. Online* **2**, 1–4 (2007) (p. 142)
342. Wang, F.-Y.: Coupling for Ornstein–Uhlenbeck processes with jumps. *Bernoulli* **17**, 1136–1158 (2011) (p. 147, 149, 150)
343. Wang, J.: Criteria for ergodicity of Lévy type operators in dimension one. *Stoch. Process. Appl.* **118**, 1909–1928 (2008) (p. 164)
344. Wang, J.: Regularity of semigroups generated by Lévy type operators via coupling. *Stoch. Process. Appl.* **120**, 1680–1700 (2010) (p. 179)
345. Wang, J.: Stability of Markov processes generated by Lévy type operators. *Chin. J. Contemp. Math.* **32**, 1–20 (2011) (p. 57, 97)
346. Wang, J.: On the existence and explicit estimates for the coupling property of Lévy processes with drift. *J. Theor. Probab.* (2012). doi:10.1007/s10959-012-0463-y (p. 159)
347. Wang, J.: On the exponential ergodicity for Lévy driven Ornstein–Uhlenbeck processes. *J. Appl. Probab.* **49**, 990–1104 (2012) (p. 179)
348. Wang, J.: A simple approach to functional inequalities for non-local Dirichlet Forms. *ESAIM Probab. Stat.* (2013). doi:10.1051/ps/2013048 (p. 144, 146)
349. Wang, J.: Sub-Markovian C_0 -semigroups generated by fractional Laplacian with gradient perturbation. *Integral Equ. Oper. Theory* **76**, 151–161 (2013) (p. 30)
350. Wang, F.-Y., Wang, J.: Coupling and strong Feller for jump processes on Banach spaces. *Stoch. Process. Appl.* **123**, 1588–1615 (2013) (p. 157)
351. Wang, F.-Y., Wang, J.: Functional inequalities for stable-like Dirichlet forms. *J. Theor. Probab.* (2013). doi:10.1007/s10959-013-0500-5 (p. 146)

- 352. Wentzell (Vent'cel), A.D.: On boundary conditions for multi-dimensional diffusion processes. *Theory Probab. Appl.* **4**, 164–177 (1959) (p. xiii)
- 353. Xiao, Y.: Random fractals and Markov processes. In: Lapidus, M.L., Frankenhuijsen, M.v. (eds.) *Fractal Geometry and Applications: A Jubilee of Benoît Mandelbrot*. *Proceedings of Symposia in Pure Mathematics*, vol. 72.2, pp. 261–338. American Mathematical Society, Providence (2004) (p. 40, 111, 125)
- 354. Yosida, K.: *Functional Analysis*, 6th edn. Springer, Berlin (1980) (p. 17, 84)
- 355. Zhang, X.C.: Derivative formula and gradient estimates for SDEs driven by α -stable processes. *Stoch. Process. Appl.* **123**, 1213–1228 (2013) (p. 160)

Index

- affine process, 5, 9, 15, 20
- anisotropic function space, 73, 106
- Aronson's estimates, 5

- Bernstein function, 35, 45, 102
- Besov space, 136
- Beurling–Deny representation, 80
- Blumenthal–Gettoor–Pruitt index, 125, 131
- bounded coefficients, 55
- bp-convergence, 1
- Brownian motion, 3, 14, 18, 34
 - coupling, 152
 - not strongly continuous on C_b , 8

- càdlàg modification, 15
- C_b -Feller property, 7
- Chapman–Kolmogorov equations, 7
- characteristic exponent, 33, 43
- characteristic function, 31
- characteristic operator, 26
 - extends generator, 27
- closed operator, 18
- complete class, 66
- completely monotone, 45
- compound Poisson process, 34, 149
- conservative, 35, 56, 165
 - criteria for —, 56, 57
- constant coefficients, 51
- convolution semigroup, 4, 11, 14, 19, 32, 34
- core, 24
 - of Lévy generator, 39
 - of O-U generator, 20
 - sufficient conditions, 24
- coupling, 147
 - of Lévy process, 148, 150
 - of subordinate process, 152
 - property, 147
 - time, 147
 - time estimate, 154
 - successful —, 147
- Courrège–v. Waldenfels theorem, 47, 62
- covariance matrix, 33

- differential characteristics, 65
- diffusion, 4, 70, 74–76
 - with jumps, 64
- Dirichlet form, 79
 - gives Feller process, 85
- Dirichlet operator, 22, 80
- dissipative, 21
- distribution (generalized function), 46
- drift coefficient, 33
- Dynkin's formula, 27
- Dynkin–Kinney criterion, 27
- Dynkin–Reuter lemma, 22

- example
 - not strongly Feller, 11
 - of discontinuous symbol, 54
 - of generators, 18–20, 165
 - of processes, 14–15, 34–35, 63–64, 97, 134
 - of semigroups, 3–5, 8–9, 34–35
 - of symbols, 34–35, 51–52, 76, 134
 - transience/recurrence, 163–165
- excessive, 101
- exit probability, 112–113, 115
- extended generator, 26

- fast positiv, 47
- Feller generator, 18
 - domain, 24

- extension, 59–60
- integro-differential form, 47
- mapping property, 91
- pseudo-differential form, 50
- Feller process, 13
 - — generated by SDE, 75
 - — gives Dirichlet form, 83, 84
 - — is Itô process, 65
 - — solves SDE, 78
- asymptotic behaviour, 129, 131
- càdlàg modification, 15
- conservative, 56, 57
- exit probability, 112–113, 115
- exponential moment, 122
- generated by SDE, 76
- mean exit time, 114, 119
- solution of martingale problem, 90
- Feller property, 3, 16
 - C_b — —, 7
 - strong — —, 10, 109, 110, 150
- Feller semigroup, 3, 7, *See also* semigroup
 - C_b — —, 7
 - extension to L^p , 28–29
 - strong — —, 10
 - vs. C_b -Feller semigroup, 9–10, 67
 - vs. Feller resolvent, 17
 - vs. strong Feller semigroup, 11, 12
- Feynman–Kac formula, 108
- Fourier multiplier, 37
- Fourier transform, 31
 - inverse — —, 31
- full class, 66
- full generator, 25
- fundamental solution, 86
- generator, 18
 - characteristic operator, 26
 - core, 24
 - extended — —, 26
 - full — —, 25
 - local operator, 27–28
 - local part, 47
 - non-local part, 47
 - of a Feller process, 47, 50
 - of a Lévy process, 36, 39
 - of a Newtonian system, 165
 - of an affine process, 20
 - of an O-U process, 19
 - pointwise — —, 23
 - subordinate — —, 103
 - weak — —, 23
- h -transform, 101
- Hartman–Wintner condition, 154
- Has’minskii’s lemma, 109
- Hausdorff dimension, 124
- Hille–Yosida–Ray theorem, 22, 70
- Hunt process, 82
- infinitely divisible, 32, 43
- integro-differential operator, 39
- irreducible, 160
- Itô process, 65
- jump measure, 33, 65
- Kato condition, 109
- killing rate, 33
- Kolmogorov equation, 87
- Lévy
 - density, 4
 - measure, 33, 65
 - system, 65
 - triplet, 33, 43
- Lévy process, 4, 14, 34, 35, 81
 - — with killing, 35
 - coupling, 148, 150
 - operator core for — —, 39
 - subordinate — —, 104
- Lévy–Itô decomposition, 41
- Lévy–Khintchine formula, 33, 42
 - for a subordinator, 102
 - proof, 50
- life-time, 13
- Liouville property, 157
- local operator, 27, 47, 81
- log-Sobolev inequality, 143
- Lyapunov function, 162, 163
- martingale problem, 89, 90
 - localization, 94
 - well posedness, 90
- maximal inequality, 114, 116
- mean exit time, 114, 119
- moment, 122
- Nash inequality, 142
- negative definite function, 42
- negative definite symbol, 51

- Orlicz space, 12
- Ornstein–Uhlenbeck process, 4, 14, 19, 34, 51, 156
- p -variation, 132
- petite set, 161
- Plancherel's identity, 31
- Poincaré inequality, 144
- Poisson process, 3, 8, 11, 14, 18, 34
- positive definite, 41
 - conditionally —, 42
- positive maximum principle (PMP), 21, 46
 - as limit of Dirichlet operators, 22
- potential, 108
- potential operator, 16
- prèsque positif, 47
- pseudo-differential operator, 51
- recurrent, 160
- resolvent, 16, 21
 - equation, 17
 - operator, 16
- Riesz representation theorem, 7
- sector condition, 80, 82, 116
- semigroup, 2
 - adjoint —, 29
 - conservative —, 2, 12–13
 - contraction —, 3, 167
 - convolution —, 32
 - exponential formula, 17
 - Feller —, 3
 - inversion formula, 17
 - Lipschitz —, 171
 - Markov —, 2
 - norm continuous —, 8
 - positive —, 2
 - strongly continuous —, 3, 5–7, 167
 - sub-Markov —, 2
 - subordinate —, 103
 - symmetric —, 28
 - uniformly equi-bounded —, 167
 - vaguely continuous —, 4, 32
- semimartingale, 64
 - characteristics, 64
 - differential characteristics, 65
- shift semigroup, 3, 8, 11, 14, 18, 34
- Sobolev space, 70, 104, 135
- spatially homogeneous, 14
- stable semigroup, 3, 14, 18, 34
- stochastic continuity, 15
 - vs. strong continuity, 15
- stochastic differential equation
 - generates Feller process, 75, 76
- strong continuity, 5–7
 - vs. stochastic continuity, 15
- subordinate process, 103
- subordination, 102, 151
 - generator, 103
 - preserves functional inequality, 142
- functional calculus, 103
- subordinator, 4, 15, 34
- supermedian, 101
- symbol, 37, 51
 - of a Feller process, 51, 58, 61
 - of a Lévy process, 57
 - of a stochastic process, 63
 - of an SDE, 76
- bounded coefficients, 55
- continuity in x , 54–56
- defines differential characteristics, 65
- describes mapping property, 91
- negative definite —, 51
- probabilistic formula, 61
- smoothness in ξ , 44, 74
- smoothness in x , 74
- subordinate —, 104
- T -model, 161
- time change, 100
- transient, 160
- transition function, 13
- translation invariant, 32, 81
- Triebel–Lizorkin space, 136
- truncation function, 33
- ultracontractivity, 11
 - vs. strong Feller property, 11
- vague convergence, 2
- vanishing at infinity, 1
- variable coefficients, 51
- wavelet basis, 139
- weak convergence, 1, 2, 23

Edited by J.-M. Morel, B. Teissier; P.K. Maini

Editorial Policy (for the publication of monographs)

1. Lecture Notes aim to report new developments in all areas of mathematics and their applications - quickly, informally and at a high level. Mathematical texts analysing new developments in modelling and numerical simulation are welcome.
Monograph manuscripts should be reasonably self-contained and rounded off. Thus they may, and often will, present not only results of the author but also related work by other people. They may be based on specialised lecture courses. Furthermore, the manuscripts should provide sufficient motivation, examples and applications. This clearly distinguishes Lecture Notes from journal articles or technical reports which normally are very concise. Articles intended for a journal but too long to be accepted by most journals, usually do not have this "lecture notes" character. For similar reasons it is unusual for doctoral theses to be accepted for the Lecture Notes series, though habilitation theses may be appropriate.
2. Manuscripts should be submitted either online at www.editorialmanager.com/lnm to Springer's mathematics editorial in Heidelberg, or to one of the series editors. In general, manuscripts will be sent out to 2 external referees for evaluation. If a decision cannot yet be reached on the basis of the first 2 reports, further referees may be contacted: The author will be informed of this. A final decision to publish can be made only on the basis of the complete manuscript, however a refereeing process leading to a preliminary decision can be based on a pre-final or incomplete manuscript. The strict minimum amount of material that will be considered should include a detailed outline describing the planned contents of each chapter, a bibliography and several sample chapters.
Authors should be aware that incomplete or insufficiently close to final manuscripts almost always result in longer refereeing times and nevertheless unclear referees' recommendations, making further refereeing of a final draft necessary.
Authors should also be aware that parallel submission of their manuscript to another publisher while under consideration for LNM will in general lead to immediate rejection.
3. Manuscripts should in general be submitted in English. Final manuscripts should contain at least 100 pages of mathematical text and should always include
 - a table of contents;
 - an informative introduction, with adequate motivation and perhaps some historical remarks: it should be accessible to a reader not intimately familiar with the topic treated;
 - a subject index: as a rule this is genuinely helpful for the reader.

For evaluation purposes, manuscripts may be submitted in print or electronic form (print form is still preferred by most referees), in the latter case preferably as pdf- or zipped ps-files. Lecture Notes volumes are, as a rule, printed digitally from the authors' files. To ensure best results, authors are asked to use the LaTeX2e style files available from Springer's web-server at:

[ftp://ftp.springer.de/pub/tex/latex/svmonot1/](http://ftp.springer.de/pub/tex/latex/svmonot1/) (for monographs) and
[ftp://ftp.springer.de/pub/tex/latex/svmult1/](http://ftp.springer.de/pub/tex/latex/svmult1/) (for summer schools/tutorials).

Additional technical instructions, if necessary, are available on request from lnm@springer.com.

4. Careful preparation of the manuscripts will help keep production time short besides ensuring satisfactory appearance of the finished book in print and online. After acceptance of the manuscript authors will be asked to prepare the final LaTeX source files and also the corresponding dvi-, pdf- or zipped ps-file. The LaTeX source files are essential for producing the full-text online version of the book (see <http://www.springerlink.com/openurl.asp?genre=journal&issn=0075-8434> for the existing online volumes of LNM). The actual production of a Lecture Notes volume takes approximately 12 weeks.
5. Authors receive a total of 50 free copies of their volume, but no royalties. They are entitled to a discount of 33.3 % on the price of Springer books purchased for their personal use, if ordering directly from Springer.
6. Commitment to publish is made by letter of intent rather than by signing a formal contract. Springer-Verlag secures the copyright for each volume. Authors are free to reuse material contained in their LNM volumes in later publications: a brief written (or e-mail) request for formal permission is sufficient.

Addresses:

Professor J.-M. Morel, CMLA,
École Normale Supérieure de Cachan,
61 Avenue du Président Wilson, 94235 Cachan Cedex, France
E-mail: morel@cmla.ens-cachan.fr

Professor B. Teissier, Institut Mathématique de Jussieu,
UMR 7586 du CNRS, Équipe “Géométrie et Dynamique”,
175 rue du Chevaleret
75013 Paris, France
E-mail: teissier@math.jussieu.fr

For the “Mathematical Biosciences Subseries” of LNM:

Professor P. K. Maini, Center for Mathematical Biology,
Mathematical Institute, 24-29 St Giles,
Oxford OX1 3LP, UK
E-mail: maini@maths.ox.ac.uk

Springer, Mathematics Editorial, Tiergartenstr. 17,
69121 Heidelberg, Germany,
Tel.: +49 (6221) 4876-8259

Fax: +49 (6221) 4876-8259
E-mail: lnm@springer.com