

A note on r -balayages of matrix-exponential Lévy processes

Yuan-Chung Sheu, *Department of Applied Mathematics, National Chiao Tung University, Hsinchu, Taiwan*

Yu-Ting Chen, *Institute of Mathematics, Academia Sinica, Taipei, Taiwan*

Abstract

In this note we give semi-explicit solutions for r -balayages of matrix-exponential Lévy processes. To this end, we turn to an identity for the joint Laplace transform of the first entry time and the undershoot and a semi-explicit solution of the negative Wiener-Hopf factor. Our result is closely related to the works by Mordecki in [11], Asmussen, Avram and Pistorius in [3], Chen, Lee and Sheu in [7], and many others

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Bibliography

1. Alili, L., Kyprianou, A.E. Some remarks on first passage of Lévy processes, the American put and pasting principles. *Annals of Applied Probability* 15 (2005), 2062-2080. [MR2152253 \(2006b:60078\)](#).
2. Asmussen, S. *Applied Probability and Queues*, Vol.51 of *Applications of Mathematics* (New York). 2nd edition, Springer-Verlag, Berlin, (2003). [MR1978607 \(2004f:60001\)](#).
3. Asmussen, S., Avram, F., Pistorius, M.R. Russian and American put options under exponential phase-type Lévy models. *Stochastic Processes and Their Applications* 109 (2004), 79-111. [MR2024845 \(2004m:91096\)](#).
4. Avram, F., Usabel, M. Finite time ruin probabilities with one Laplace transform. *Insurance, Mathematics and Economics* 32 (2003), 371-377. [MR1994498](#).
5. Botta, R.F., Harris, C.M. Approximation with generalized hyperexponential distributions: weak convergence results. *Queueing Systems* 2 (1986), 169-190. [MR0896234 \(88i:60145\)](#)
6. Boyarchenko, S., Levendorskii, S. American options: the EPV pricing model. *Annals of Finance* 1 (2005), 267-292. Math. Review number not available.
7. Chen, Y.T., Lee, C.F., Sheu, Y.C. An ODE approach for the expected discounted penalty at ruin in a jump-diffusion model. *Finance and Stochastics* 11 (2007), 323-355. [MR2322916 \(2008h:91085\)](#)
8. Dixit, A.K., Pyndick, R.S. *Investment under Uncertainty*. Princeton University Press, New Jersey, (1994). Math. Review number not available.
9. Gerber, H.U., Shiu, E.S.W. On the time value of ruin. *North American Actuarial Journal* 2 (1998), 48-78. [MR1988433](#)
10. Lewis, A.L., Mordecki, E. Wiener-Hopf factorization for Lévy processes having positive jumps with rational transforms. *Journal of Applied Probability* 45 (2008), 118-134. [MR2409315 \(2009d:60144\)](#)
11. Mordecki, E. Optimal stopping and perpetual options for Lévy processes. *Finance and Stochastics* 6 (2002), 473-493. [MR1932381 \(2003j:91059\)](#)
12. Sato, K. *Lévy processes and infinitely divisible distributions*. Cambridge University Press, Cambridge, (1999). [MR1739520 \(2003b:60064\)](#)
13. Stein, E.M., Shakarchi, R. *Real Analysis, Princeton Lectures in Analysis III*. Princeton University Press, New Jersey, (2005). [MR2129625 \(2005k:28024\)](#)
14. Stein, E.M., Shakarchi, R. *Fourier Analysis, Princeton Lectures in Analysis I*. Princeton University Press, New Jersey, (2003). [MR1970295 \(2004a:42001\)](#)

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