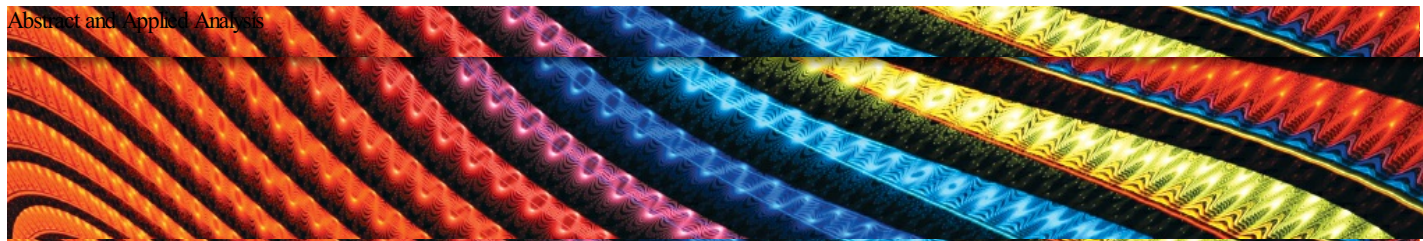


Hindawi Publishing Corporation

- [Home](#)
- [Journals](#)
- [About Us](#)

Abstract and Applied Analysis



[About this Journal](#) [Submit a Manuscript](#) [Table of Contents](#)

Journal Menu

- [About this Journal](#) ·
- [Abstracting and Indexing](#) ·
- [Advance Access](#) ·
- [Aims and Scope](#) ·
- [Annual Issues](#) ·
- [Article Processing Charges](#) ·
- [Articles in Press](#) ·
- [Author Guidelines](#) ·
- [Bibliographic Information](#) ·
- [Citations to this Journal](#) ·
- [Contact Information](#) ·
- [Editorial Board](#) ·
- [Editorial Workflow](#) ·
- [Free eTOC Alerts](#) ·
- [Publication Ethics](#) ·
- [Reviewers Acknowledgment](#) ·
- [Submit a Manuscript](#) ·
- [Subscription Information](#) ·
- [Table of Contents](#)
- [Open Special Issues](#) ·
- [Published Special Issues](#) ·
- [Special Issue Guidelines](#)
- [Abstract](#)
- [Full-Text PDF](#)
- [Full-Text HTML](#)
- [Full-Text ePUB](#)
- [Full-Text XML](#)
- [Linked References](#)
- [How to Cite this Article](#)
- [Complete Special Issue](#)

Abstract and Applied Analysis
Volume 2013 (2013), Article ID 128625, 8 pages
<http://dx.doi.org/10.1155/2013/128625>

Research Article

Numerical Analysis for Stochastic Partial Differential Delay Equations with Jumps

[Yan Li](#)^{1,2} and [Junhao Hu](#)³

¹Department of Control Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

²College of Science, Huazhong Agriculture University, Wuhan 430074, China

³College of Mathematics and Statistics, South-Central University for Nationalities, Wuhan 430074, China

Received 3 January 2013; Accepted 21 March 2013

Academic Editor: Xuerong Mao

Copyright © 2013 Yan Li and Junhao Hu. This is an open access article distributed under the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Linked References

1. G. Da Prato and J. Zabczyk, *Stochastic Equations in Infinite Dimensions*, vol. 44 of *Encyclopedia of Mathematics and Its Applications*, Cambridge University Press, Cambridge, UK, 1992. [View at Publisher](#) · [View at Google Scholar](#) · [View at MathSciNet](#)
2. K. Liu, *Stability of Infinite Dimensional Stochastic Differential Equations with Applications*, Chapman & Hall/CRC, Boca Raton, Fla, USA, 2004. [View at MathSciNet](#)
3. Q. Luo, F. Deng, J. Bao, B. Zhao, and Y. Fu, “Stabilization of stochastic Hopfield neural network with distributed parameters,” *Science in China F*, vol. 47, no. 6, pp. 752–762, 2004. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
4. Q. Luo, F. Deng, X. Mao, J. Bao, and Y. Zhang, “Theory and application of stability for stochastic reaction diffusion systems,” *Science in China F*, vol. 51, no. 2, pp. 158–170, 2008. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
5. X. Mao, *Stochastic Differential Equations and Applications*, Horwood Publishing, Chichester, UK, 2007. [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
6. Y. Shen and J. Wang, “An improved algebraic criterion for global exponential stability of recurrent neural networks with time-varying delays,” *IEEE Transactions on Neural Networks*, vol. 19, no. 3, pp. 528–531, 2008. [View at Publisher](#) · [View at Google Scholar](#)
7. Y. Shen and J. Wang, “Almost sure exponential stability of recurrent neural networks with markovian switching,” *IEEE Transactions on Neural Networks*, vol. 20, no. 5, pp. 840–855, 2009. [View at Publisher](#) · [View at Google Scholar](#)
8. I. Gyöngy and N. Krylov, “Accelerated finite difference schemes for linear stochastic partial differential equations in the whole space,” *SIAM Journal on Mathematical Analysis*, vol. 42, no. 5, pp. 2275–2296, 2010. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
9. A. Jentzen, P. E. Kloeden, and G. Winkel, “Efficient simulation of nonlinear parabolic SPDEs with additive noise,” *The Annals of Applied Probability*, vol. 21, no. 3, pp. 908–950, 2011. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
10. P. E. Kloeden, G. J. Lord, A. Neuenkirch, and T. Shardlow, “The exponential integrator scheme for stochastic partial differential equations: pathwise error bounds,” *Journal of Computational and Applied Mathematics*, vol. 235, no. 5, pp. 1245–1260, 2011. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
11. J. Bao, A. Truman, and C. Yuan, “Stability in distribution of mild solutions to stochastic partial differential delay equations with jumps,” *Proceedings of The Royal Society of London A*, vol. 465, no. 2107, pp. 2111–2134, 2009. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
12. B. Boufoussi and S. Hajji, “Successive approximation of neutral functional stochastic differential equations with jumps,” *Statistics and Probability Letters*, vol. 80, no. 5-6, pp. 324–332, 2010. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
13. E. Hausenblas, “Finite element approximation of stochastic partial differential equations driven by Poisson random measures of jump type,” *SIAM Journal on Numerical Analysis*, vol. 46, no. 1, pp. 437–471, 2007/08. [View at Publisher](#) · [View at Google Scholar](#) · [View at MathSciNet](#)
14. S. Peszat and J. Zabczyk, *Stochastic Partial Differential Equations with Lévy Noise: An Evolution Equation Approach*, vol. 113 of *Encyclopedia of Mathematics and Its Applications*, Cambridge University Press, Cambridge, UK, 2007. [View at Publisher](#) · [View at Google Scholar](#) · [View at MathSciNet](#)
15. M. Röckner and T. Zhang, “Stochastic evolution equations of jump type: existence, uniqueness and large deviation principles,” *Potential Analysis*, vol. 26, no. 3, pp. 255–279, 2007. [View at Publisher](#) · [View at Google Scholar](#) · [View at MathSciNet](#)
16. J. Bao, B. Böttcher, X. Mao, and C. Yuan, “Convergence rate of numerical solutions to SFDEs with jumps,” *Journal of Computational and Applied Mathematics*, vol. 236, no. 2, pp. 119–131, 2011. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
17. N. Jacob, Y. Wang, and C. Yuan, “Numerical solutions of stochastic differential delay equations with jumps,” *Stochastic Analysis and Applications*, vol. 27, no. 4, pp. 825–853, 2009. [View at Publisher](#) · [View at Google Scholar](#) · [View at Zentralblatt MATH](#) · [View at MathSciNet](#)
18. A. Pazy, *Semigroups of Linear Operators and Applications to Partial Differential Equations*, vol. 44 of *Applied Mathematical Sciences*, Springer, New York, NY, USA, 1983. [View at Publisher](#) · [View at Google Scholar](#) · [View at MathSciNet](#)