

## Editing

- [E.1] J. F. Blowey, A. W. Craig, and T. Shardlow, eds. [Frontiers in Numerical Analysis](#). Universitext. Papers from the 10th LMS–EPSRC Numerical Analysis Summer School held at the University of Durham, July 7–19, 2002. Springer, 2003. xiv+349 pages. ISBN: 3-540-44319-3. DOI: [10.1007/978-3-642-55692-0](#).





## Book











- [B.1] G. Lord, C. Powell, and T. Shardlow. [An Introduction to Computational Stochastic PDEs](#). Cambridge Texts in Applied Mathematics. CUP, 2014. x+509 pages. ISBN: 978-0521728522. DOI: [10.1017/cbo9781139017329](#). Supplementary material: [typos](#). Codes: [MATLAB](#) and [Python](#).















## Preprints




- [P.2] F. Cornalba, T. Shardlow, and J. Zimmer. A regularised Dean–Kawasaki model: derivation and analysis. 2018. arXiv: [1802.01716](#).
- [P.1] T. Shardlow. A walk outside spheres for the fractional Laplacian: fields and first eigenvalue. 2018. arXiv: [1803.03921](#). Github: [Julia code](#).

## Refereed publications

- [R.33] G. Katsiolides, E. H. Müller, R. Scheichl, T. Shardlow, M. B. Giles, and D. J. Thomson. Multilevel Monte Carlo and Improved Timestepping Methods in Atmospheric Dispersion Modelling. In: *J. Computational Physics* 354 (2018), pp. 320–343. DOI: [10.1016/j.jcp.2017.10.035](#). arXiv: [1612.07717](#). Bitbucket: [C++ code](#). 
- [R.32] P. Kloeden and T. Shardlow. Gauss-quadrature method for one-dimensional mean-field SDEs. In: *SIAM J. Scientific Computing* 39.6 (2017), A2784–A2807. DOI: [10.1137/16M1095688](#). arXiv: [1608.06741](#). Github: [Julia code](#). 
- [R.31] A. Kyprianou, A. Osojnik, and T. Shardlow. Unbiased walk-on-spheres Monte Carlo methods for the fractional Laplacian. In: *IMA J. Numerical Analysis* (2017). DOI: [10.1093/imanum/drx042](#). arXiv: [1609.03127](#). Bitbucket: [Matlab code](#). 
- [R.30] S. Marsland and T. Shardlow. Langevin equations for landmark image registration with uncertainty. In: *SIAM Imaging Science* 10.2 (2017), pp. 782–80. DOI: [10.1137/16M1079282](#). arXiv: [1605.09276](#). Github: [Python code](#). 

- [R.29] T. Shardlow and P. Taylor. On the pathwise approximation of stochastic differential equations. In: *BIT* 56 (3 2016), pp. 1101–1129. DOI: [10.1007/s10543-015-0597-2](https://doi.org/10.1007/s10543-015-0597-2). arXiv: [1409.2362](https://arxiv.org/abs/1409.2362). 
- [R.28] E. Müller, R. Scheichl, and T. Shardlow. Improving MLMC for SDEs with application to the Langevin equation. In: *Proceedings Royal Society A* 471.20140679 (2015). DOI: [10.1098/rspa.2014.0679](https://doi.org/10.1098/rspa.2014.0679). arXiv: [1409.2342](https://arxiv.org/abs/1409.2342). Bitbucket: [C++ code](#). 
- [R.27] H. Tang, T. Shardlow, and J. M. Owen. Use of fin equation to calculate Nusselt numbers for rotating discs. In: *J. Turbomach* 137.12 (2015). DOI: [10.1115/1.4031355](https://doi.org/10.1115/1.4031355). 
- [R.26] H. Alzubaidi and T. Shardlow. Improved simulation techniques for first exit time of neural diffusion models. In: *Communications in Statistics – Simulation and Computation* 43.10 (2014). DOI: [10.1080/03610918.2012.755197](https://doi.org/10.1080/03610918.2012.755197). 
- [R.25] H. Alzubaidi and T. Shardlow. Interaction of waves in a one-dimensional stochastic PDE model of excitable media. In: *Discrete and Continuous Dynamical Systems – Series B* 18.7 (2013), pp. 1735–1754. DOI: [10.3934/dcdsb.2013.18.1735](https://doi.org/10.3934/dcdsb.2013.18.1735). 
- [R.24] P. E. Kloeden and T. Shardlow. The Milstein scheme for stochastic delay differential equations without using anticipative calculus. In: *Stoch. Anal. Appl.* 30 (2012), pp. 181–202. DOI: [10.1080/07362994.2012.628907](https://doi.org/10.1080/07362994.2012.628907). 
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- [R.21] E. Buckwar, R. Kuske, S.-E. Mohammed, and T. Shardlow. Weak convergence of the Euler scheme for stochastic differential delay equations. In: *LMS J. Comput. Math.* 11 (2008), pp. 60–99. ISSN: 1461-1570. DOI: [10.1112/S146115700000053X](https://doi.org/10.1112/S146115700000053X). 
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- [R.18] G. J. Lord and T. Shardlow. Postprocessing for stochastic parabolic partial differential equations. In: *SIAM J. Numer. Anal.* 45.2 (2007), pp. 870–889. ISSN: 0036-1429.  
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