List of publications

Frank van der Meulen

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All papers are peer reviewed, except papers marked by a □.

1 STATISTICAL INFERENCE FOR STOCHASTIC PROCESSES

1. M.A. Corstanje, F.H. van der Meulen, M. Schauer and S. Sommer (2025) *Simulating conditioned diffusions on manifolds*. Accepted for publication in Bernoulli.
2. G. Yang, F.H. van der Meulen and S. Sommer (2025) *Neural guided diffusion bridges*. ICML 2025.
3. M.A. Corstanje and F.H. van der Meulen (2025) *Guided simulation of conditioned chemical reaction networks*. Statistical Inference for Stochastic Processes **28**(8).
4. T. Pieper-Sethmacher, F.H. van der Meulen and A.W. van der Vaart (2025) *On a class of exponential changes of measure for stochastic PDEs*, Stochastic Processes and their Applications.
5. D. Belomestny, F.H. van der Meulen, and P. Spreij (2023), *Nonparametric Bayesian inference for stochastic processes with piecewise constant priors*, Mathematics of Risk 2022 MATRIX Annals, Editors: David R. Wood, Jan de Gier, Cheryl E. Praeger, Terence Tao. MATRIX Book Series, Springer.
6. J. Bierkens, S. Grazzi, F.H. van der Meulen and M. Schauer (2023)*Sticky PDMP samplers for sparse and local inference problems*, Statistics and Computing **33**(8).
7. M.A. Corstanje, F.H. van der Meulen and M. Schauer (2023) *Conditioning continuous-time Markov processes by guiding*, Stochastics, **95**(6), 963–996.

8. S. Gugushvili, F.H. van der Meulen, M. Schauer and P. Spreij (2022), *Nonparametric Bayesian volatility learning under microstructure noise*, Japanese Journal of Statistics and Data Science **6**(1), 551-571.

9. A. Arnaudon, F.H. van der Meulen, M.R. Schauer and S. Sommer (2022), *Diffusion bridges for stochastic Hamiltonian systems and Shape Evolutions*, SIAM Journal on Imaging Sciences (SIMS), **15**(1), 293-323.

10. S. Sommer, M. Schauer and F.H van der Meulen *Stochastic flows and shape bridges* (2021). In Statistics of Stochastic Differential Equations on Manifolds and Stratified Spaces (hybrid meeting), number 48 in Oberwolfach Reports, Mathematisches Forschungsinstitut Oberwolfach, 2021. doi: 10.4171/OWR/2021/48. □

11. M. Mider, M.R. Schauer and F.H. van der Meulen (2021) *Continuous-discrete smoothing of diffusions*, Electronic Journal of Statistics 15, 4295-4342.

12. J. Bierkens, S. Grazzi, F.H. van der Meulen and M. Schauer (2021) *A piecewise deterministic Monte Carlo method for diffusion bridges*, Statistics and Computing **31**(3).

13. J. Bierkens, F.H. van der Meulen and M.R. Schauer (2020) *Simulation of elliptic and hypo-elliptic conditional diffusions*, Advances in Applied Probability **52**, 173—212.

14. F.H. van der Meulen, M. Schauer, S. Grazzi, S. Danisch and M. Mider (2020) *Bayesian inference for SDE models: a case study for an excitable stochastic-dynamical model*, Nextjournal https://nextjournal.com/Lobatto/FitzHugh-Nagumo. □

15. F.H. van der Meulen and M.R. Schauer (2017) *Bayesian estimation of incompletely observed diffusions*, Stochastics **90**(5), 641–662.

16. F.H. van der Meulen and M.R. Schauer (2017) *Bayesian estimation of discretely observed multi-dimensional diffusion processes using guided proposals*, Electronic Journal of Statistics **11**(1), 2358–2396.

17. M.R. Schauer, F.H. van der Meulen and J.H. van Zanten (2017) *Guided proposals for simulating multi-dimensional diffusion bridges*, Bernoulli **23**(4A), 2917–2950.

18. F.H. van der Meulen, M.R. Schauer and J.H. van Zanten (2014) *Reversible jump MCMC for nonparametric drift estimation for diffusion processes*, Computational Statistics and Data Analysis **71**, 615–632.

19. F.H. van der Meulen, M.R. Schauer, J. van Waaij (2017) *Adaptive nonparametric drift estimation for diffusion processes using Faber-Schauder expansions*, Statistical Inference for Stochastic Processes **21**(3), 603–628.

20. S. Gugushvili, F.H. van der Meulen, M.R. Schauer and P. Spreij (2020) *Nonparametric Bayesian estimation of a Holder continuous diffusion coefficient*, Brazilian Journal of Probability and Statistics **34**(3), 537–579.

21. S. Gugushvili, F.H. van der Meulen, M.R. Schauer and P. Spreij (2020) *Fast and scalable non-parametric Bayesian inference for Poisson point processes*, researchers.one, corresponding code is on zenodo https://zenodo.org/record/1215901#.Wtg3N9NuZTY.

22. S. Gugushvili, F.H. van der Meulen, M.R. Schauer and P. Spreij (2018) *Nonparametric Bayesian volatility estimation*, MATRIX Annals, Editors: David R. Wood, Jan de Gier, Cheryl E. Praeger, Terence Tao. MATRIX Book Series, Vol **2**, Springer.

23. S. Gugushvili, F.H. van der Meulen and P.J. Spreij (2018) *A non-parametric Bayesian approach to decompounding from high frequency data*. Statistical Inference for Stochastic Processes **21**, 53–79.

24. S. Gugushvili, S., P. Spreij and F.H. van der Meulen (2015) *Non-parametric Bayesian inference for multi-dimensional compound Poisson processes*, Modern Stochastics: Theory and Applications **2**(1), 1–15.

25. F.H. van der Meulen and J.H. van Zanten (2013) *Consistent nonparametric Bayesian inference for discretely observed scalar diffusions*, Bernoulli **19**(1), 44—63.

26. F.H. van der Meulen, A.W. van der Vaart and J.H. van Zanten (2006) *Convergence rates of posterior distributions for Brownian semimartingale models*, Bernoulli **12**(5), 863–888.

27. G. Jongbloed and F.H. van der Meulen (2006) *Parametric estimation for subordinators and induced OU-processes*, Scandinavian Journal of Statistics **33**(4), 825–847

28. G. Jongbloed, F.H. van der Meulen and A.W. van der Vaart (2005) *Nonparametric inference for Lévy driven Ornstein-Uhlenbeck processes*, Bernoulli **11**(5), 759–791.

29. F.H. van der Meulen (2005) *Statistical estimation for Levy driven OU-processes and Brownian semimartingales*, Phd-thesis, Vrije Universiteit Amsterdam. □

2 DECONVOLUTION, DECOMPOUNDING, DENOISING, CENSORING...

1. G. Jongbloed, F.H. van der Meulen and L. Pang (2022) *Bayesian nonparametric estimation in the current status continuous mark model*, Scandinavian Journal of Statistics **49**(3), 1329–1352.

2. G. Jongbloed, F.H. van der Meulen and L. Pang (2021) *Nonparametric Bayesian estimation of a concave distribution function with mixed interval censored data*, Brazilian Journal of Probability and Statistics **35**(3), 544-568.

3. G. Jongbloed, F.H. van der Meulen and L. Pang (2021) *Bayesian estimation of a decreasing density*, Brazilian Journal of Probability and Statistics **35**(2), 392–420.

4. S. Gugushvili, E. Mariucci and F.H. van der Meulen (2020) *Decompounding discrete distributions: a non-parametric Bayesian approach*, Scandinavian Journal of Statistics **47**(2), 464–492.

5. S. Gugushvili, F.H. van der Meulen, M.R. Schauer and P. Spreij (2019) *Bayesian wavelet de-noising with the Caravan prior*, ESAIM Probability and Statistics **23**, 947–978.

6. G. Jongbloed, G. and F.H. van der Meulen (2009) *Estimating a concave distribution function from data corrupted with additive noise*, Annals of Statistics **37**(2), 782–815.

3 APPLIED STATISTICS

1. R. Hindriks, F.H. van der Meulen, M. van Putten and P. Tewarie (2025) *Unraveling high-order interactions in electrophysiological brain signals using elliptical distributions: Moving beyond the Gaussian approximation*. Accepted for publication in Journal of Physics: Complexity.

2. L. Gomaz, B. van Trigt, F. van der Meulen and D.J. Veeger (2024) *Predicting elbow load based on individual pelvis and trunk (inter)segmental rotations in fastball pitching*, Sports Biomechanics. DOI: 10.1080/14763141.2024.2315230

3. L. Gomaz, D.J. Veeger, E. van der Graaff, B. van Trigt and F.H. van der Meulen (2021) *Individualised Ball Speed Prediction in Baseball Pitching based on IMU Data*, accepted for publication in Sensors

4. R.B. Hageman, F.H. van der Meulen, A. Rouhan and M.L. Kaminski (2021) *Improved Risk-Based Inspection planning through in-service Hull Structure Monitoring of FPSO hulls*, accepted for publication in Marine Structures.

5. L. Mészáros, F.H. van der Meulen, G. Jongbloed and G. el Sarafy (2021) *Climate change induced uncertainties in Phytoplankton spring bloom dynamics*, accepted for publication in Frontiers in Marine Science.

6. L. Mészáros, F.H. van der Meulen, G. Jongbloed and G. el Sarafy (2021) *A stochastic climate generator to complement existing climate change scenarios*, Stochastic Environmental Research and Risk Assessment (SERRA) **35**, 719–736.

7. K. Hartman, A. Wittich, J.J. Cai, F.H. van der Meulen and J.M.N. Azevedo (2016) *Estimating the age of Rissos dolphins (Grampus griseus) based on skin appearance*, Journal of Mammology **97**(2), 490–502.

8. F.H. van der Meulen, S. Luca, G. Overal, A. di Bucchianico and G. Jongbloed (2014) *Modeling a water purification process for quality monitoring*, Proceedings of the 98th Study Group Mathematics with Industry, 36–54. □

9. F.H. van der Meulen, R. Hageman (2013) *Fatigue Predictions using Statistical Inference within the Monitas II Project*, Proceedings of the Twenty-hrid International Offshore and Polar Engineering, 463–471. □

10. L.S.G.L. Wauben, W.M.U. van Grevenstein, R.H.M. Goossens, F.H. van der Meulen and J.F. Lange (2011) *Operative notes do not reflect reality in laparoscopic cholecystectomy*, The British journal of surgery. **98**(10), 1431–1436.

11. F.H. van der Meulen, M.B. Vermaat and P. Willems (2010) *Case Study: An application of Logistic Regression in a Six Sigma project in Healthcare*, Quality Engineering **23**, 113–124.

12. F.H. van der Meulen, H. de Koning and J. de Mast (2009) *Non-repeatable gauge R&R studies assuming temporal or patterned object variation*, Journal of Quality Technology **41**(4), 1–14.

13. M.B. Vermaat, F.H. van der Meulen and R.J.M.M. Does (2008) *Asymptotic Behaviour of the Variance of the EWMA Statistic for Autoregressive Processes*, Statistics and Probability Letters **78(**12), 1673–1682.

14. H.J.J. Ramaker, E.N.M. van Sprang, J.A. Westerhuis, S.P. Gorden, F.H. van der Meulen and A.K. Smilde (2006) *Performance assessment and improvement of control charts for statistical batch process monitoring*, Statistica Neerlandica **60**(3), 339–360.

4 OUTREACH

1. F.H. van der Meulen (2025) *Statistiek: het onzichtbare zichtbaar maken*. Nieuw Archief voor Wiskunde 26(2), 109–117. □

2. A. di Bucchianico, L. Iapichino, N. Litvak, F.H. van der Meulen and R. Wehrens (2018) *Mathematics for Big Data*, Nieuw Archief voor wiskunde, 282–287. Reprinted in "The Best Writing on Mathematics 2019". □

3. N. Litvak and F.H. van der Meulen (2015) *Networks & Big Data*, Nieuw Archief voor Wiskunde **5**(2), 138–139. □

4. G. Jongbloed and F.H. van der Meulen (2011) *Geurproef niet meer in gebruik in strafzaken (in dutch)*, Stator, pages 38-43. □

5. F.H. van der Meulen (2021) *Een uitnodiging tot data science met R* (on my website, in dutch). □

6. F.H. van der Meulen and M.R. Schauer (2017) *On residual and guided proposals for diffusion bridge simulation*. □