

# Publication List

Seiichiro Kusuoka

## Pure Mathematics (main subject)

### Preprints

- Sergio Albeverio, Seiichiro Kusuoka, Song Liang, Makoto Nakashima, “Stochastic quantization of the three-dimensional polymer measure via the Dirichlet form method”, arXiv:2311.05797.
- I. Bailleul, M. Hoshino and S. Kusuoka, “Regularity structures for quasilinear singular SPDEs”, arXiv:2209.05025.
- Seiichiro Kusuoka, “Remarks on Stochastic Systems I: Markov properties, local and global uniqueness, and limits of stochastic equations”, arXiv:2209.05961.

### Papers in press

- Sergio Albeverio and Seiichiro Kusuoka, “Construction of a non-Gaussian and rotation-invariant  $\Phi^4$ -measure and associated flow on  $\mathbb{R}^3$  through stochastic quantization”, to appear in Memoir of the American Mathematical Society, arXiv: 2102.08040.

### Published Papers

19. Masato Hoshino, Hiroshi Kawabi and Seiichiro Kusuoka, “Stochastic quantization associated with the  $\exp(\Phi)_2$ -quantum field model driven by space-time white noise on the torus in the full  $L^1$ -regime”, Probability Theory and Related Fields 185 (2023), 391-447.
18. Seiichiro Kusuoka, “An improvement of the integrability of the state space of the  $\Phi_3^4$ -process and the support of the  $\Phi_3^4$ -measure constructed by the limit of stationary processes of approximating stochastic quantization equations”, Mathematical Journal of Okayama University 65 (2023), 97-116.
17. Masato Hoshino, Hiroshi Kawabi and Seiichiro Kusuoka, “Stochastic quantization associated with the  $\exp(\Phi)_2$ -quantum field model driven by space-time white noise on the torus”, Journal of Evolution Equations, Vol. 21, Issue 1 (2021), 339-375.
16. Sergio Albeverio and Seiichiro Kusuoka, “The invariant measure and the flow associated to the  $\Phi_3^4$ -quantum field model”, Annali della Scuola Normale Superiore di Pisa (5), Vol. 20, Issue 4 (2020), 1359-1427.
15. Daehong Kim and Seiichiro Kusuoka, “Recurrence of direct products of diffusion processes in random media having zero potentials”, Electronic Journal of Probability, Vol. 25 (2020), paper no. 139, 1-18.

14. Seiichiro Kusuoka and Ciprian A. Tudor, “Characterization of the convergence in total variation and extension of the Fourth Moment Theorem to invariant measures of diffusions”, *Bernoulli*, Vol. 24, No. 2 (2018), 1463-1496.
13. Shigeki Aida, Takanori Kikuchi and Seiichiro Kusuoka, “The rates of the  $L^p$ -convergence of the Euler-Maruyama and Wong-Zakai approximations of path-dependent stochastic differential equations under the Lipschitz condition”, *Tohoku Mathematical Journal*, Vol 70, No. 1 (2018), 65-95.
12. Seiichiro Kusuoka, “Hölder and Lipschitz continuity of the solutions to parabolic equations of the non-divergence type”, *Journal of Evolution Equations*, Vol. 17, No. 3 (2017), 1063-1088.
11. Seiichiro Kusuoka, “Continuity and Gaussian two-sided bounds of the density functions of the solutions to path-dependent stochastic differential equations via perturbation”, *Stochastic Processes and their Applications*, Vol. 127, No. 2 (2017), 359-384.
10. Seiichiro Kusuoka, Hiroshi Takahashi and Yozo Tamura, “Recurrence and transience properties of multi-dimensional diffusion processes in selfsimilar and semi-selfsimilar random environments”, *Electronic Communications in Probability*, Vol. 22 (2017), paper no. 4, 1-11.
9. Seiichiro Kusuoka, Hiroshi Takahashi and Yozo Tamura, “Recurrence of the Brownian motion in multidimensional semi-selfsimilar environments and Gaussian environments”, *Potential Analysis*, Vol. 43, No. 4 (2015), 695-705.
8. Seiichiro Kusuoka, “Hölder continuity and bounds for fundamental solutions to non-divergence form parabolic equations”, *Analysis & PDE*, Vol. 8, No. 1 (2015), 1-32.
7. Seiichiro Kusuoka and Carlo Marinelli, “On smoothing properties of transition semigroups associated to a class of SDEs with jumps”, *Annales de l’Institut Henri Poincaré, Probabilités et Statistiques*, Vol. 50, No. 4, (2014), 1347-1370.
6. Seiichiro Kusuoka and Ichiro Shigekawa, “Exponential convergence of Markovian semigroups and their spectra on  $L^p$ -spaces”, *Kyoto Journal of Mathematics*, Vol. 54, No. 2 (2014), 367-399.
5. Tetsuya Hattori and Seiichiro Kusuoka, “Stochastic ranking process with space-time dependent intensities”, *ALEA, Lat. Am. J. Probab. Math. Stat.*, **9**(2), 571-607 (2012).
4. Sergio Albeverio and Seiichiro Kusuoka, “Diffusion Processes in Thin Tubes and their Limits on Graphs”, *The Annals of Probability*, Vol. 40, No. 5 (2012), 2131-2167.

3. Seiichiro Kusuoka and Ciprian A. Tudor, “Stein’s method for invariant measures of diffusions via Malliavin calculus”, *Stochastic Processes and their Applications* 122 (2012), 1627-1651.
2. Seiichiro Kusuoka, “Malliavin calculus for stochastic differential equations driven by subordinated Brownian motions”, *Kyoto Journal of Mathematics*, Volume 50, Number 3 (2010), 491-520.
1. Seiichiro Kusuoka, “Existence of densities of solutions of stochastic differential equations by Malliavin calculus”, *Journal of Functional Analysis*, **258** (2010), 758-784.

### Proceedings (refereed)

4. Seiichiro Kusuoka, Kazuhiro Kuwae and Kouhei Matsuura, “Equivalence of the Strong Feller Properties of Analytic Semigroups and Associated Resolvents” In *Dirichlet Forms and Related Topics*, Springer Proceedings in Mathematics & Statistics 394 (2022), 279–307.
3. Masato Hoshino, Hiroshi Kawabi and Seiichiro Kusuoka, “Tightness of the solutions to approximating equations of the stochastic quantization equation associated with the weighted exponential quantum field model on the two-dimensional torus” In *Stochastic Analysis, Random Fields and Integrable Probability – Fukuoka 2019*, *Advanced Studies in Pure Mathematics* 87 (2021), 341–361.
2. Seiichiro Kusuoka, “Stochastic approach to bounds and regularity of fundamental solutions to non-divergence form parabolic equations with irregular coefficients” In *Regularity, singularity and long time behavior for partial differential equations with conservation law*, *RIMS Kôkyûroku Bessatsu*, B80 (2020), 27-46.
1. Seiichiro Kusuoka, Hiroshi Takahashi, and Yozo Tamura, “Topics on multi-dimensional Brox’s diffusions” In *Stochastic Analysis on Large Scale Interacting Systems*, *RIMS Kôkyûroku Bessatsu*, B59 (2016), 31-44.

### Applied Mathematics (contribution to other subjects)

#### Published Papers

2. Naoto Nakano, Masaru Inatsu, Seiichiro Kusuoka and Yoshitaka Saiki, “Empirical evaluated SDE modelling for dimensionality-reduced systems and its predictability estimates”, *Japan Journal of Industrial and Applied Mathematics*, vol. 35, no. 2 (2018), 553-589.
1. Masaru Inatsu, Naoto Nakano, Seiichiro Kusuoka, and Hitoshi Mukougawa, “Predictability of Wintertime Stratospheric Circulation Examined Using a Non-stationary Fluctuation Dissipation Relation”, *Journal of the Atmospheric Sciences*, Volume 72, Issue 2 (2015), 774-786.

## Proceedings (refereed)

1. Naoto Nakano, Masaru Inatsu, Seiichiro Kusuoka and Yoshitaka Saiki, “Time-series analysis and predictability estimates by empirical SDE modelling”, Proceedings of the ISCIE International Symposium on Stochastic Systems Theory and Its Application (2016), 332-339.