

Linear and nonlinear Fokker–Planck–Kolmogorov equations for measures on infinite-dimensional spaces

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Abstract

We discuss existence and uniqueness results for the Cauchy problem for Fokker–Planck–Kolmogorov equations for probability measures on infinite-dimensional spaces. Model examples of linear equations are concerned with transition probabilities of infinite-dimensional diffusions associated with stochastic versions of the Navier–Stokes, Burgers, and reaction-diffusion equations. Our model examples of nonlinear equations are certain Vlasov-type stationary and evolution equations for infinite-dimensional probability distributions. The presentation is based on our joint papers [1] and [2].

References

- [1] Bogachev V. I., Da Prato G., Röckner M., Shaposhnikov S. V., “An analytic approach to infinite-dimensional continuity and Fokker–Planck–Kolmogorov equations,” *Annali Scuola Normale Super.*, (to appear).
- [2] Bogachev V. I., Da Prato G., Röckner M., Shaposhnikov S. V., “Nonlinear evolution equations for measures on infinite dimensional spaces,” in: *Stochastic Partial Differential Equations and Applications, Quaderni di Matematica*, V. 25, Series edited by Dipartimento di Matematica Seconda Università di Napoli, 2010, pp. 51–64.