ON THE PATH-INDEPENDENCE OF GIRSANOV DENSITY FOR INFINITE-DIMENSIONAL STOCHASTIC DIFFERENTIAL EQUATIONS

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Abstract: Starting from the characterisation of path-independence of Girsanov density for (finite-dimensional) stochastic differential equations, this talk will address a new link of infinite-dimensional stochastic differential equations to certain nonlinear parabolic equations in infinite-dimensional spaces, in which we obtain a characterisation of path-independent property of stochastic differential equations in infinite-dimensions. The talk is based on a joint paper with Miao Wang and a forthcoming work with Feng-Yu Wang.

References

[1] A. Truman, F.-Y. Wang, J.-L. Wu & W. Yang (2012). A link of stochastic differential equations to nonlinear parabolic equations, *SCIENCE CHINA Mathematics*, **55**, 1971-1976.

[2] M. Wang & J.-L. Wu (2014). Necessary and sufficient conditions for path-independence of Girsanov transformation for infinite-dimensional stochastic evolution equations, *Frontiers of Mathematics in China*, **9**, 601-622.

[3] F.-Y. Wang & J.-L. Wu (2014+). On the path-independence of Girsanov transform density for infinite-dimensional stochastic differential equations, in preparation.