FKG Inequality for Brownian Motion and Stochastic Differential Equations

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Abstract

The purpose of this work is to study some possible application of FKG inequality to the Brownian motion and to Stochastic Differential Equations. We introduce a special ordering on the Wiener space and prove the FKG inequality with respect to this ordering. Then we apply this result on the solutions X_t of a stochastic differential equation with a positive coefficient σ , we prove that these solutions X_t are increasing with respect to the ordering, and finally we deduce a correlation inequality between the solution of different stochastic equations.

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