Chernoff approximations for Feller semigroups in Riemannian manifolds

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In this talk I shall present the construction of Chernoff approximations for Feller semigroups in Riemannian manifolds of bounded geometry. This result provides approximations for solutions to initial-value problems for parabolic equations with variable coefficients on the manifold. It also yields the weak convergence of particular sequences of random walks on the manifolds to the diffusion processes associated with the elliptic generator. For parallelizable manifolds this result is applied in particular to the representation of the Brownian motion on the manifold as limit of the corresponding random walks.

This is a joint work with V. Moretti, I. Remizov and O. Smolyanov.

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