Dirichlet forms and stochastic flows

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Abstract:

A general theorem allows to construct stochastic flows of random transition kernels from consistent systems of Dirichlet forms. These consistent systems describe n particle motions for all integer n. They are consistent in the sense that forgetting one point in the n point motion gives the $n-1$ point motion. Applications are presented, especially sticky flows for which in the two point motion, the distance process appears to be a sticky Brownian motion. It is shown that these flows have a black noise, which means that they cannot be defined by classical SDE's or SPDE's.