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A quantum stochastic approach to spectral action

We review the spectral action for Robertson-Walker cosmologies and consider an approach through quantum stochastic processes. Towards this, we study the heat semigroups for almost commutative spectral triples characterized as endomorphism subalgebras of spinor bundles, and show that they are quantum dynamical semigroups. Then using the Goswami-Sinha quantum stochastic calculus, the existence of Evans-Hudson flows which can be viewed as defining diffusion processes on the spectral triple is established.