
KMS states on C^* -algebras associated to a local homeomorphism

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Abstract

For every Hilbert bimodule over a C^* -algebra, there are natural gauge actions of the circle on the associated Toeplitz algebra and Cuntz-Pimsner algebra, and hence natural dynamics obtained by lifting these gauge actions to actions of the real line. We study the KMS states of these dynamics for a family of bimodules associated to local homeomorphisms on compact spaces. For inverse temperatures larger than a certain critical value, we find a large simplex of KMS states on the Toeplitz algebra, and we show that all KMS states on the Cuntz-Pimsner algebra have inverse temperature at most this critical value. We then reconcile our results about Cuntz-Pimsner algebra with the recent work of Thomsen. This research was supported by the Marsden Fund of the Royal Society of New Zealand

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