

The logarithmic Sobolev inequality and the convergence of a semigroup in the Zygmund space

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It is well-known that the logarithmic Sobolev inequality implies the exponential convergence of the entropy. In this talk, we connect this fact to the convergence in the Zygmund space $L \log L$. In fact, we can show the exponential convergence of a semigroup in the Zygmund space under the assumption of the logarithmic Sobolev inequality. We also give an example of the spectrum of the generator in the Zygmund space