Complexity and dynamics in finite and infinite dimension.

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In recent joint work with Yidong Chen, we discovered spectral gap estimates and concentration inequalities for for dynamics with few generators. Some of these estimates are dimension free and then can be used to feed in the recent theory of complexity initiated by Lloyf and Jaffe, and adapted more recently for specific resources. The goal is to find a viable theory of complexity which holds in type II_1 and III_1 von Neumann algebras, both of which comming naturally in quantum field theory and Witten's take on black holes.