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Markovianity and the Thompson Monoid F^+

In the process of identifying a suitable distributional symmetry to describe Markovianity, it has been conjectured by C. Köstler that there is a certain correspondence between unilateral Markov shifts and representations of the Thompson monoid F^+. After having illustrated this correspondence in the context of tensor products of W^*-algebraic probability spaces, I will present the following two general results. A representation of the Thompson monoid F^+ in the endomorphisms of a W^*-algebraic probability space yields a noncommutative Markov process (in the sense of Kümmerer). Conversely, such a representation is obtained from a noncommutative Markov process which is given as a coupling to a so-called spreadable noncommutative Bernoulli shift.

This is joint work with Claus Köstler and Stephen Wills.