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On Markovian Sums with Applications in Statistics*

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Abstract - Finite sums of Markov chains do not necessarily preserve the Markovian dependence. We present some sufficient conditions which allow the Markovian character to be inherited. Applications from the queueing theory, from statistical process control and from survey sampling are discussed. The advantages of the Markovian character of the observable sums consist in the simplicity of the statistical inference procedures.

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