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Large deviations for posterior distributions on the parameter of a multivariate AR(p) process

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Abstract We prove the large deviation principle for the posterior distributions on the (unknown) parameter of a multivariate autoregressive process with i.i.d. Normal innovations. As a particular case, we recover a previous result for univariate first-order autoregressive processes. We also show that the rate function can be expressed in terms of the divergence between two spectral densities.

Keywords Large deviation principle · Spectral density · Divergence · Relative entropy