

Bayesian inverse problems with non-commuting operators

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The Bayesian approach to ill-posed operator equations in Hilbert space recently gained attraction. In this context, and when the prior distribution is Gaussian, then two operators play a significant role, the one which governs the operator equation, and the one which describes the prior covariance. Typically it is assumed that these operators commute. Here we extend this analysis to non-commuting operators, replacing the commutativity assumption by a link condition. We discuss its relation to the commuting case, and we indicate that this allows to use interpolation type results to obtain tight bounds for the contraction of the posterior Gaussian distribution towards the data generating element.

References:

[1] arXiv:1801.09540

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