Posterior contraction in nonparametric inverse problems

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Abstract. *Asymptotic behaviour of posterior distribution is closely linked to the rate of convergence of various natural point estimators based on the posterior. Unfortunately, classical posterior contraction theory is not suitable to deal with truly ill-posed inverse problems, and many results rely on explicit posterior computations.*

In this talk I will first briefly explain why classical theorems are not directly applicable or cannot be easily adjusted to nonparametric inverse problems. I will then present a general contraction theorem, relying on posterior contraction results for corresponding direct problems. The general theorem will be applied to two standard nonparametric models: sequence space model and fixed design inverse regression.