

Bayesian SpatioTemporal Modeling for Inverse Problems

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This is a short course to introduce Bayesian methods to inverse problems with spatiotemporal inputs or observations. It will start with a brief introduction to general Bayesian inverse problems based on [?]. Then we will focus on the inverse problems with spatiotemporal inputs or outputs and discuss particular Bayesian models for these problems. Lastly, we will talk about how deep learning techniques can be leveraged to speed up the inference for Bayesian inverse problems.

The course will cover the following topics:

- Introduction to Bayesian inverse problems
- Bayesian spatiotemporal modeling
- Bayesian spatiotemporal models for inverse problems
- Scaling up Bayesian uncertainty quantification with deep neural networks

Graduate students with background in statistics, computational and applied maths are welcome.



ShortBio Dr. Lan is an Assistant Professor at the School of Mathematical and Statistical Sciences, Arizona State University. His research focuses on Bayesian nonparametric modeling and Bayesian uncertainty quantification of complicated systems. Dr. Lan obtained his PhD at Department of Statistics, University of California, Irvine in 2014. After graduation, he did postdocs at University of Warwick and California Institute of Technology. He joined ASU in 2019.

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