

연세대학교 통계연구소 세미나



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"Bayesian inverse modeling with regularization for air pollution source location"

Abstract: The behavior of air pollution is governed by complex dynamics, in which the pollutants in an observation site transport from and to nearby locations via physical processes. In atmospheric physics, several approaches have been proposed to identify source locations under a forward or inverse dispersion model, but there are still challenges in the precise estimation of air pollution source. In this presentation, we address the challenges by introducing a Bayesian hierarchical model with regularization, which incorporates both physical knowledge and random error assumptions on the model discrepancy. Compared to traditional atmospheric physics approaches, the Bayesian approach provides an honest evaluation of estimation uncertainty and can address the small n , large p challenge. This talk also presents the comparison between the suggested method and other Bayesian regularized regression approaches including Bayesian lasso and ridge.

Education:

Ph.D., The Ohio State University, Columbus, OH, 2012 (Statistics).

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