

VIRGINIA TECH DEPARTMENT OF STATISTICS COLLOQUIUM

COMPOSITE LIKELIHOOD ESTIMATION FOR SPATIAL KRIGING UNDER INFORMATIVE
SAMPLING

ERIN SCHLIEP

FEBRUARY 16 | 3.30 PM (ET)

IN-PERSON SEMINAR

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Abstract

Informative sampling designs are broadly used across many application areas of statistical modeling and can have a large impact on model inference and prediction. In spatial modeling, informative sampling can result in biased spatial covariance parameter estimation, which in turn can bias spatial prediction. To mitigate these biases, we develop a weighted composite likelihood approach to improve spatial covariance parameter estimation under informative sampling designs. Then, given these parameter estimates, we propose two approaches to quantify the effects of the sampling design on the variance estimates in spatial prediction in order to make informed decisions for population-based inference.



Bio

Erin Schliep is an Associate Professor in the Department of Statistics at North Carolina State University. She has research interests in Bayesian statistics as well as multivariate and spatiotemporal statistics. Most recently, her work has focused on developing statistical methods for multivariate data that arise from informative or preferential sampling designs. Her work is motivated by problems in environmental science, ecology, and sports.