ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

ΣΧΟΛΗ ΕΠΙΣΤΗΜΩΝ & ΤΕΧΝΟΛΟΓΙΑΣ ΤΗΣ ΠΛΗΡΟΦΟΡΙΑΣ
SCHOOL OF INFORMATION SCIENCES & TECHNOLOGY

ΤΜΗΜΑ ΣΤΑΤΙΣΤΙΚΗΣ
DEPARTMENT OF STATISTICS

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Bayesian analysis of multifidelity computer models with local features and non-nested experimental designs: Application to the WRF model

ΤΕΤΑΡΤΗ 18/9/2019, 13:15 – 14:30

ΑΙΘΟΥΣΑ Τ203
Τροίας 2, Νέο Κτίριο ΟΠΑ

ΠΕΡΙΛΗΨΗ

Co-kriging is an established framework for the statistical analysis of expensive computer models running at different fidelity levels. Motivated by a Weather Research and Forecasting (WRF) climate model with different resolutions, we develop a new Bayesian treed co-kriging model. The proposed method, unlike existing ones, can take into account local features and discrepancies, while it can be used with non-nested experimental designs. Our procedure utilizes binary treed partition ideas that allow input dependent discrepancies, representation of local features, and discovery of sudden changes in the multifidelity setting. To facilitate the parameter and predictive inference, we design a reversible jump MCMC sampler tailored to the proposed model, which involves collapsed blocks, and direct simulation from conditional distributions. The good performance of our method is demonstrated on artificial benchmark examples and compared against existing methods. The proposed method is implemented for the analysis of a large-scale climate modeling application which involves the WRF model.

AUEB STATISTICS SEMINAR SERIES
SEPTEMBER 2019

Georgios Karagiannis

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WEDNESDAY 18/9/2019, 13:15 – 14:30

Room T203,
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