

ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ ΚΑΙ ΕΦΑΡΜΟΣΜΕΝΩΝ ΜΑΘΗΜΑΤΙΚΩΝ

ΟΜΙΛΙΕΣ ΣΤΑΤΙΣΤΙΚΗΣ ΚΑΙ ΠΙΘΑΝΟΤΗΤΩΝ

10:15am, Τετάρτη, 26 Απριλίου 2017
Αίθουσα Α-303

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Technology (KAUST)*

Inference, coarse-graining and simulations in stochastic systems

The focus of the current presentation is on the use of statistical inference methods to predict efficient modeling with stochastic differential equations. I will present two applications of inference methods for stochastic processes: a) in wind power forecasting and b) in coarse-graining of molecular systems. Using an indirect inference approach, we construct a probabilistic wind power forecasting model based on numerical weather predictions and historical observations. I will also discuss the use of a path-space variational inference method to obtain optimal coarse-grained models for equilibrium and non-equilibrium molecular dynamics, given simulated microscopic level data.