

ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
ΣΧΟΛΗ ΕΦΑΡΜΟΣΜΕΝΩΝ ΜΑΘΗΜΑΤΙΚΩΝ ΚΑΙ
ΦΥΣΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΟΜΕΑΣ ΜΑΘΗΜΑΤΙΚΩΝ
Ηρώων Πολυτεχνείου 5
Πολυτεχνειούπολη Ζωγράφου, Κτήριο Ε
GR. 157 73, ΑΘΗΝΑ



NATIONAL TECH. UNIV. OF ATHENS
SCHOOL OF APPLIED MATHEMATICAL AND
PHYSICAL SCIENCES
DEPARTMENT OF MATHEMATICS
5, Heroes of Polytechniou Avenue
Zografou Campus, E Building
GR.-157 73 ATHENS, HELLAS

☎ +30 210 772 1748,1774 ,3291, - Telefax: +30 210 77 21775

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Δ Ι Α Λ Ε Ξ Η

Ομιλητής: Omiros Papaspiliopoulos

(ICREA research professor, based at UPF)

Τίτλος : «Markov chain Monte Carlo sampling for machine learning and inverse problems »

Περίληψη : I will give a synthetic overview of the challenges, objectives and the state-of-the-art for prediction and uncertainty quantification using Markov chain Monte Carlo in Bayesian inverse problems and in machine learning. I will first show how some standard problems in inverse problems and machine learning can be formulated as problems of simulating from high (or even infinite) dimensional change of Gaussian measure. I will then show how Monte Carlo simulation algorithms can be constructed by discretising the Langevin stochastic differential equation and highlight the two most popular algorithms, the so-called preconditioned Metropolis-adjusted Langevin algorithm (pMALA) and the preconditioned Crank-Nicolson Langevin (pcNL) algorithm. I will then refer to some recent work jointly with Michalis Titsias (Computer Science, AUEB) that has produced algorithms that achieve enormous efficiency gains relative to the state-of-the-art and demonstrate their success in high-dimensional regression and classification problems.

Η ομιλία θα δοθεί την **Τετάρτη 17 Μαΐου 2017** και **ώρα 12:30**, στην Αίθουσα Σεμιναρίων του Τομέα Μαθηματικών, κτ. Ε΄, 2ος όροφος.

Η περίληψη επισυνάπτεται.

Η Επιτροπή Σεμιναρίων