Stanford University
Department of Statistics

Departmental Seminar

4:30pm, Tuesday, February 27, 2018
Sloan Mathematics Center Room 380Y

Refreshments served at 4pm in Sequoia Lounge.

Speaker: Jelena Bradic
Department of Mathematics,
University of California San Diego

Title: Can we do inference without sparsity in the high-dimensional setting or breaking the curse of dimensionality?

Abstract:

High-dimensional models often impose structures on the signal strengths. The common assumption is that only a few signals are strong and most of the signals are zero or close (collectively) to zero. However, such a requirement might not be valid in many real-life applications. In this talk, we are interested in conducting large-scale inference in models that might have signals that are high-dimensional and yet not necessarily sparse. The key challenge is that the signals that are not under testing might be collectively non-negligible (although individually small) and cannot be accurately learned. This talk will present a new class of tests that arise from a moment matching formulation. A virtue of these moment-matching statistics is their ability to borrow strength across features, adapt to the sparsity size and exert adjustment for testing growing number of hypothesis. In particular, lack of sparsity in the original model parameter does not present a problem for the theoretical justification of our procedures.