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STATISTICS COLLOQUIUM

MONDAY, MARCH 28, 2016
TALK: 4:15 PM — SCIENCE CENTER 300H
RECEPTION: 3:50 PM

“The Statistical Price for Computational Efficiency”

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ABSTRACT

With the explosion of the size of data, computation has become an integral part of statistics. Convex relaxations for example have been successfully employed to derive efficient procedures with provably optimal statistical guarantees. Unfortunately, computational efficiency sometimes comes at an inevitable statistical cost. Therefore, one needs to redefine optimality among computationally efficient procedures.

Using tools from information theory and computational complexity, we quantify this cost in the context of two models:

- (i) the multi-armed bandit problem, and
- (ii) sparse principal component analysis.

[Based on joint work with Q. Berthet, S. Chassang, V. Perchet and E. Snowberg.]