



QMC Opening Workshop August 28-September 1, 2017

Lecture: *Quasi-polynomial Tractability of Linear Tensor Products using Function Values*

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Abstract:

We study QPT (quasi-polynomial tractability) in the worst case setting of linear tensor product problems defined over Hilbert spaces. We prove QPT for algorithms that use only function values under three assumptions'

1. the minimal errors for the univariate case decay polynomially fast to zero,
2. the largest singular value for the univariate case is simple,
3. the eigenfunction corresponding to the largest singular value is a multiple of the function value at some point.

The first two assumptions are necessary for QPT. The third assumption is necessary for QPT for some Hilbert spaces.

Joint work with Erich Novak