

abstract

Computer Science/Discrete Mathematics Seminar I
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We propose an “analytical” framework for studying parallel repetitions of one-round two-prover games. We define a new relaxation of the value of a game, val^+ , and prove that it is both multiplicative and a good approximation for the true value of the game. These two properties imply Raz's parallel repetition theorem as

$$\text{val}(G^k) \sim \text{val}^+(G^k) = \text{val}^+(G)^k \sim \text{val}(G)^k$$

Using this approach, we will describe a reasonably simple proof for the NP-hardness for $\text{label-cover}(1, \delta)$, the starting point of many inapproximability results.

We also discuss some new results, including

- * parallel repetition for small-soundness games
- * a new reduction from general to projection games
- * a tight bound for few repetitions matching Raz's counterexample.

Based on joint work with David Steurer.