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香港中文大學
The Chinese University of Hong Kong

Institute of Theoretical Computer Science and Communications

ITCSC Colloquium

Strong Parallel Repetition Theorem for Free Projection Games

By
Ms. Ricky Rosen
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February 22, 2010 (Monday)
3:00 pm – 4:00 pm
Rm. 1027, 10/F., Ho Sin Hang Engineering Building, CUHK

Abstract:
The parallel repetition theorem states that for any two provers one round game with value at most 1-\eps (for \eps<1/2), the value of the game repeated n times in parallel is at most (1-\eps^3)^{\Omega(n/\log s)} where s is the size of the answers set.

For Projection Games the bound on the value of the game repeated n times in parallel was improved to (1-\eps^2)^{\Omega(n)} and was shown to be tight. In this paper we show that if the questions are taken according to a product distribution then the value of the repeated game is at
most (1-\eps^2)^{\Omega(n/\log s)} and if in addition the game is a {\em Projection Game} we obtain a {\em strong parallel repetition} theorem, i.e., a bound of (1-\eps)^{\Omega(n)}.

This is joint work with Boaz Barak, Anup Rao, Ran Raz and Ronen Shaltiel.

Biography:
Ms. Rosen is a computer science PhD student at Tel-Aviv University working under the supervision of Prof. Ran Raz (The Weizmann Institute of Science) and Prof. Oded Regev (Tel- Aviv University). Her main interest is theoretical computer science mainly, complexity and approximation algorithms and Parallel Repetition problems.

***** ALL ARE WELCOME *****

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