



香港中文大學
The Chinese University of Hong Kong

Institute of Theoretical Computer Science and Communications

ITCSC-CSE Joint Seminar

**Old and New PCP Constructions:
Towards the Sliding Scale Conjecture**

By

Prof. Prahladh Harsha

Tata Institute of Fundamental Research

October 19, 2015, Monday

2:00 pm – 3:00 pm

Room 121, 1/F, Ho Sin Hang Engineering Building, CUHK

Abstract:

The PCP theorem (AS,ALMSS 1991) guarantees that every NP language has a probabilistically checkable proof (PCP) system allowing a verifier to check a witness very efficiently using randomness, and allowing for small error.

One of the long standing open problems in the PCP literature is the "sliding-scale conjecture" of Bellare-Goldreich-Lund-Russell from 1993. This conjecture states that there exist polynomial sized constant query PCPs with inverse polynomially small error. In this work, we make some progress towards this conjecture by revisiting older PCP constructions and analyzing them using the more "modern" modular composition approach.

The talk will not assume any prior knowledge of PCPs.

[Joint work with Irit Dinut and Guy Kindler]

Biography:

Prahladh Harsha is an Associate Professor at the School of Technology and Computer Science (STCS) at the Tata Institute of Fundamental Research (TIFR), Mumbai. He obtained his Bachelor's degree from the Indian Institute of Technology (IIT) Madras in 1998 and his Ph.D. from the Massachusetts Institute of Technology (MIT) in 2004. Prior to TIFR, he was previously working at Microsoft Research, Silicon Valley and Toyota Technological Institute, Chicago. Prahladh Harsha's research interests are in the area of theoretical computer science, with special emphasis on computational complexity theory.

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

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