Computer Science/Discrete Mathematics Seminar I

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New Independent Source Extractors with Exponential Improvement

Series: Computer Science/Discrete Mathematics

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Date & Time: Mon, 01/28/2013 - 11:15 - 12:15

Location: S-101

Video Link:
http://video.ias.edu/1213/csdm/0128-XinLi

We study the problem of constructing extractors for independent weak random sources. The probabilistic method shows that such an extractor exists for two sources on n bits with min-entropy k >= 2 log n. On the other hand, explicit constructions are far from optimal. Previously the best known extractor for (n,k) sources requires O(log n/log k) independent sources [Rao06, Barak-Rao-Shaltiel-Wigderson06]. In this talk I will give a new extractor that uses only O(log (log n/log k))+O(1) independent sources. This improves the previous best result exponentially. The extractor is based on a new method for condensing somewhere random sources, which seems promising for further improvements.

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terms:

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