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David Zuckerman* (diz@cs.utexas.edu), Department of Computer Science, University of Texas at Austin, 1616 Guadalupe, Suite 2.408, Austin, TX 78701. *Pseudorandom Financial Derivatives from Expander Graphs.*

Arora, Barak, Brunnermeier, and Ge showed that taking computational complexity into account, a dishonest seller could dramatically increase the lemon costs of a family of financial derivatives. We show that if the seller is required to construct derivatives of a certain form, then this phenomenon disappears. In particular, we define and construct *pseudorandom derivative families*, for which lemon placement only slightly affects the values of the derivatives. Our constructions use expander graphs and randomness extractors.

We study our derivatives in a more general setting than Arora et al. In particular, we analyze arbitrary tranches of the common collateralized debt obligations (CDOs) when the underlying assets can have significant dependencies. (Received September 14, 2010)