1063-60-165    **Eyal Lubetzky\*** (`eyal@microsoft.com`), Microsoft Research, 1 Microsoft Way, Redmond, WA 98052. *The cutoff phenomenon on explicit expanders.*

The cutoff phenomenon describes a sharp transition in the convergence of an ergodic finite Markov chain to equilibrium. Of particular interest is understanding this convergence for the simple random walk on a bounded-degree expander graph.

We will discuss the recent progress on this topic, focusing on two recent works joint with Allan Sly. In particular, we will present the first explicit construction of cubic expanders exhibiting total-variation cutoff from a worst case initial position, an explicit construction of cubic expanders without cutoff as well as cubic graphs with cutoff at any prescribed time-point. (Received August 15, 2010)