Department of Mathematics, BGU

Combinatorics Seminar

On *Tuesday, December ,4 2018*

At *15:30 − 17:00*

In *201*

Arnold Filtser (BGU)

will talk about

Steiner Point Removal with distortion O(log k), using the Relaxed Voronoi algorithm

Abstract: In the Steiner Point Removal (SPR) problem, we are given a weighted graph $G=(V,E)$ and a set of terminals $K\subset V$ of size k. The objective is to find a minor M of G with only the terminals as its vertex set, such that distances between the terminals will be preserved up to a small multiplicative distortion. Kamma, Krauthgamer and Nguyen [SICOMP2015] devised a ball-growing algorithm with exponential distributions to show that the distortion is at most $O(\log^5 k)$. Cheung [SODA2018] improved the analysis of the same algorithm, bounding the distortion by $O(\log^2 k)$. We devise a novel and simpler algorithm (called the Relaxed Voronoi algorithm) which incurs distortion $O(\log k)$. This algorithm can be implemented in almost linear time ($O(|E|\log |V|)$).

Please Note the Unusual Time and Place!