Variance estimates for generalized random polygons

Balázs Grünfelder

University of Szeged (Hungary)

(Joint work with F. Fodor and V. Vígh)

We prove asymptotic lower bounds on the variance of the number of vertices and missed area of random disc-polygons in convex discs whose boundary is C_+^2 smooth. The established lower bounds are of the same order as the upper bounds proved previously in Fodor, Vígh (2018).

We also prove asymptotic upper bounds on the variance of the number of vertices and missed area of random L-convex polygons. For two convex discs K and L, we say that K is L-convex if it is the intersection of all translates of L containing K. We consider two cases: first we assume that the the curvature of K and L are strictly bounded away from each other. In the second case we assume that $K = L$.