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On asymptotic properties of generalized random polygons

Let L and K be convex discs. We say that K is L-convex if it is the intersection of all translates of L that contain K. We consider the following probability model: Assume that K is L-convex, and take n independent random points form K according to the uniform probability distribution. The intersection of all translates of L containing the points is a random L-polygon in K. In this talk, we present asymptotic bounds for the variance of the number of vertices and area of such random L-polygons under various geometric conditions on K and L. Joint work with Ferenc Fodor (University of Szeged, Hungary).

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