## Asymptotics for Random Spherical DISC–Polygons

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In this talk, we consider random polygons in a spherical setting, in a generalised notion of convexity. A spherical set H is called *r*-spindle convex, if it is the intersection of all spherical discs of radius r that contain H. We define a uniform random spherical disc-polygon as the spindle-convex hull of finitely many uniform i.i.d. points chosen from a fixed spherical spindle-convex disc. We consider the expected asymptotic behaviour of this random object as the number of chosen points tends to infinity. Specifically, we determine the asymptotic value of the expected number of vertices and edges, as well as the area- and perimeter deviation of the disc-polygon from the original smooth convex disc. We consider the relationship of these results to the previously known results on the sphere in the usual notion of convexity, as well as results in Euclidean spindle-convexity.

This is joint work with Viktor Vígh (University of Szeged).

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