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Circumscribed random spherical disc-polygons via duality

In this talk, we work on S^2 and study random spherical disc-polygons within a spherical convex disc whose boundary is C^2 smooth. This model encompasses the usual spherical convex model and, as a limiting case, planar spindle convexity as well. We establish asymptotic results for the area and perimeter of the inscribed random disc-polygon. Next, we introduce a spherical spindle-convex duality, which allows us to naturally define circumscribed random spherical disc-polygons. Using the area and perimeter formulas of the dual disc, we obtain asymptotic results in the circumscribed model as well.

This is a joint work with Kinga Nagy.