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Probabilité que n points soient en position convexe dans un polygone quelconque : Résultats asymptotiques

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The study of the probability that n points drawn uniformly and independently in a convex domain of area 1 (in the plane) are in convex position, meaning, they form the vertex set of a convex polygon, is quite an age-old question. The matter was risen at the end of the 19th century with Sylvester's conjecture for $n = 4$ points, solved by Blaschke in 1917. Since then, general results for n points came one after the other in the square, the triangle or the disk, as well as other asymptotic results.
In this talk I will give an equivalent of the probability $\mathbb{P}_n$ that n points are in convex position in a regular convex polygon to deduce an analogous result for any convex polygon; so far, the most precise formula was due to Bárány and identified the limit $n^2(\mathbb{P}_n)^{1/n}$ (though Bárány's formula holds for general convex domains).
Bárány also proved that a convex n-gon drawn uniformly in a fixed convex domain K converges to a deterministic domain. Still working in the case where K is a polygon, we present second order results for the fluctuations of the n-gon around this domain.

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