

The evolution of random graphs on surfaces

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For integers $g, m \geq 0$ and $n > 0$, let $S_g(n, m)$ denote the graph taken uniformly at random from the set of all graphs on $\{1, 2, \dots, n\}$ with exactly $m = m(n)$ edges and with genus at most g . We use counting arguments to investigate the properties of $S_g(n, m)$, finding that there is often different asymptotic behaviour depending on the ratio $\frac{m}{n}$.

This is joint work with Mihyun Kang and Philipp Sprüssel.