

Title: Chasing robbers on random geometric graphs

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Abstract: We study the vertex pursuit game of *Cops and Robbers*, in which cops try to capture a robber on the vertices of the graph. The minimum number of cops required to win on a given graph G is called the cop number of G . We focus on $G_d(n, r, p)$, a random subgraph of the random geometric graph in which n vertices are chosen uniformly at random and independently from $[0, 1]^d$, and two vertices are adjacent with probability p if the Euclidean distance between them is at most r ; $T_d(n, r, p)$ is defined similarly with the only difference that the torus metric is used instead. We present asymptotic results for the game of Cops and Robber played on $G_d(n, r, 1)$ and $T_d(n, r, p)$ for a wide range of $p = p(n)$ and $r = r(n)$. (Joint work with Noga Alon.)