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THE CHROMATIC NUMBER OF RANDOM INTERSECTION GRAPHS

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Abstract

We study problems related to the chromatic number of a random intersection graph $\mathcal{G}(n, m, p)$. We introduce two new algorithms which colour $\mathcal{G}(n, m, p)$ with almost optimum number of colours with probability tending to 1 as $n \to \infty$. Moreover we find a range of parameters for which the chromatic number of $\mathcal{G}(n, m, p)$ asymptotically equals its clique number.

Keywords: random intersection graphs, chromatic number, colouring algorithms.

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