



Conditioned Poisson distributions and the concentration of chromatic numbers

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The paper provides a simpler method for proving a delicate inequality that was used by Achlioptis and Naor to establish asymptotic concentration for chromatic numbers of Erdos-Renyi random graphs. The simplifications come from two new ideas. The first involves a sharpened form of a piece of statistical folklore regarding goodness-of-fit tests for two-way tables of Poisson counts under linear conditioning constraints. The second idea takes the form of a new inequality that controls the extreme tails of the distribution of a quadratic form in independent Poissons random variables.

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