

LARGE DEVIATION PRINCIPLES FOR EMPIRICAL MEASURES OF COLOURED RANDOM GRAPHS

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Unfortunately we have to report a mistake in the paper with the above title, published in [2]. The proof of the lower bound for the large deviation probabilities in Theorem 2.5, given in Section 4.5, requires the pair (ϖ, ν) to be consistent rather than only sub-consistent. A superexponentially decreasing upper bound for the strictly sub-consistent case can be given.

As a consequence the rate function in Theorem 2.5, and by implication in Theorem 2.1, is infinite if the pair (ϖ, ν) is sub-consistent and not consistent. In the consistent case both results remain unchanged. As a further consequence of this correction, the formula for the large deviation rate of the empirical degree distribution of Erdős-Rényi graphs in Corollary 2.2 needs to be changed in the case $\langle d \rangle < c$ to have the same form as in the case $\langle d \rangle \geq c$.

The corrected formula has also been found by Bordenave and Caputo in [1] using some of our arguments, and later independently by Mukherjee in [3]. We would like to thank Charles Bordenave who pointed out the problem to us.

BIBLIOGRAPHY

- [1] C. BORDENAVE and P. CAPUTO. Large deviations of empirical neighborhood distribution in sparse random graphs. *arxiv:1308.5725* (2013).
- [2] K. DOKU-AMPONSAH and P. MÖRTERS. Large deviation principles for empirical measures of coloured random graphs. *Ann. Appl. Probab.* **20** (2010) 1989-2021.
- [3] S. MUKHERJEE Large deviation for the empirical degree distribution of an Erdos-Renyi graph. *arXiv:1310.4160* (2013).

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