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Section:

12. Probability and Statistics

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Spectral gap of certain continuous-time Markov processes.

The talk is devoted to bounding the spectral gap of mean-field models and random walks on complete graphs. We study the behaviour of the spectral gap, as the number of sites $N \to \infty$, and also as a function of the parameters of the process considered. Exact values of spectral gap are found in some cases. We also reveal a phenomenon of existence critical points of parameters w. r. t. spectral gap. The results are derived via extension of Zeifman's method based on using the logarithmic norm of an operator.