
SEQUENCES OF BIPARTITE GRAPHS AND CONVERGENCE OF THEIR EIGENVALUES

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ABSTRACT

An interval in which a given graph has no eigenvalues is called a gap interval. We show that for any positive real number there exist infinitely many bipartite graphs with gap interval of a given length. We provide a recurrence relation for the computation of the characteristic polynomial of certain graphs and based on it, we conclude that the sequence of the least positive (resp. largest negative) eigenvalues of a growing sequence of these graphs is convergent. We also discuss possible limit points and their distribution on real line.

Keywords bipartite graphs · tridiagonal matrices · convergence

References

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