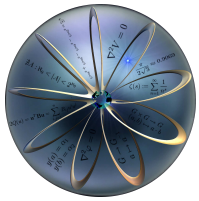

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algebraic connectivity of a graph

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Entry type	Definition
Classification	msc 05C50
Defines	algebraic connectivity

Let $L(G)$ be the `http://planetmath.org/LaplacianMatrixOfAGraph`Laplacian matrix of a finite connected graph G with n vertices. Let the eigenvalues of $L(G)$ be denoted by $\lambda_1 \leq \lambda_2 \leq \cdots \leq \lambda_n$, which is the usual notation in spectral graph theory. The *connectivity* of G is λ_2. The usual notation for the algebraic connectivity is $a(G)$. The parameter is a measure of how well the graph is connected. For example, $a(G) \neq 0$ if and only if G is connected.

References

[1] Fieldler, M. Algebraic connectivity of graphs, *Czech. Math. J.* **23** (98) (1973) pp. 298-305.

[2] Merris, R. Laplacian matrices of graphs: a survey, *Lin. Algebra and its Appl.* **197/198** (1994) pp. 143-176.