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Non-negative spectrum of a digraph*

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Abstract: Digraphs are considered by means of eigenvalues of the matrix AA^T , and similarly $A^T A$, where A is the adjacency matrix of a digraph. The common spectrum of these matrices is called *non-negative spectrum* or *N -spectrum* of a digraph. Several properties of the N -spectrum are proved. The notion of cospectrality is generalized, and some examples of cospectral (multi)(di)graphs are constructed.

Keywords: Digraph, non-negative spectrum, multigraph, cospectrality, isomorphism.

Math. Subj. Class.: 05C20

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Nenegativni spekter digrafa*

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Povzetek: Digrafe obravnavamo s pomočjo lastnih vrednosti matrike AA^T , in podobno $A^T A$, kjer je A matrika sosednosti digrafa. Skupni spekter teh matrik se imenuje *nenegativni spekter* ali *N-spekter* digrafa. Dokažemo več lastnosti *N-spektra*. Posplošimo pojem kospektralnosti in konstruiramo nekaj primerov kospektralnih (multi)(di)grafov.

Ključne besede: Digraf, nenegativni spekter, multigraf, kospektralnost, izomorfizem.

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