

Povzetek

V diplomskem delu so predstavljene popolnoma nenegativne $(0,1)$ -matrike in nekaj njihovih lastnosti. Za $(0,1)$ -matrike, ki nimajo ničelne vrstice ali ničelnega stolpca, določimo kriterij, po katerem lahko dokaj preprosto preverimo popolno nenegativnost. Pokažemo, da je največje možno število ničel v nerazcepni, popolnoma nenegativni $(0,1)$ -matriki velikosti n enako $(n - 1)^2$ in ugotovimo, kakšne so matrike s tem številom ničel. Pokažemo tudi, da je najmanjši možen spektralni radij nerazcepne, popolnoma nenegativne $(0,1)$ -matrike velikosti n enak $2 + 2 \cos\left(\frac{2\pi}{n+2}\right)$ in karakteriziramo vse nerazcepne, popolnoma nenegativne $(0,1)$ -matrike s tem spektralnim radijem.

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15A15, 15A18, 15A42.

Ključne besede:

$(0,1)$ -matrika, nerazcepna matrika, popolnoma nenegativna matrika, lastna vrednost, spekter matrike, spektralni radij.

Literatura

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