GENERALIZATIONS OF BRAUER’S EIGENVALUE LOCALIZATION THEOREM*  

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Abstract. New eigenvalue inclusion regions are given by establishing the necessary and sufficient conditions for two classes of nonsingular matrices, named double $\alpha_1$-matrices and double $\alpha_2$-matrices. These results are generalizations of Brauer’s eigenvalue localization theorem and improvements over the results in [L. Cvetković, V. Kostić, R. Bru, and F. Pedroche. A simple generalization of Geršgorin’s theorem. Adv. Comput. Math., 35:271–280, 2011.].

Key words. Matrix eigenvalue, Brauer’s eigenvalue localization theorem, Double $\alpha_1$-matrices, Double $\alpha_2$-matrices.

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