SIMPLIFICATIONS OF THE OSTROWSKI UPPER BOUNDS FOR THE SPECTRAL RADIUS OF NONNEGATIVE MATRICES

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Abstract. A.M. Ostrowski in 1951 gave two well-known upper bounds for the spectral radius of nonnegative matrices. However, the bounds are not of much practical use because they all involve a parameter α in the interval [0, 1], and it is not easy to decide the optimum value of α. In this paper, their equivalent forms which can be computed with the entries of matrix and without having to minimize the expressions of the bounds over all possible values of α ∈ [0, 1], are given.

Key words. Spectral radius, Ostrowski, Nonnegative matrices.

AMS subject classifications. 15A18, 15A42, 15A48.

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