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A NOTE ON ESTIMATES FOR THE SPECTRAL RADIUS OF A NONNEGATIVE MATRIX*

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Abstract. Utilizing the concept of Perron complement, a new estimate for the spectral radius of a nonnegative irreducible matrix is presented. A new matrix is derived that preserves the spectral radius while its minimum row sum increases and its maximum row sum decreases. Numerical examples are provided to illustrate the effectiveness of this approach.

Key words. Perron complement, Perron root, Nonnegative matrix, Irreducibility, Spectral radius.

AMS subject classifications. 15A18, 15A42, 15A57, 65F15, 65F99.

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