GENERALIZATION OF THE PEČARIĆ–RAJIĆ INEQUALITY IN NORMED LINEAR SPACES

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Abstract. In this paper we establish a generalization of the recent Pečarić-Rajić inequality by providing upper and lower bounds for the norm of the linear combination \( \sum_{j=1}^{n} \alpha_j x_j \) where \( \alpha_j \in \mathbb{K} \) and \( x_j \in X \) for \( j \in \{1, \ldots, n\} \) with \( n \geq 2 \). Applications for two vectors that are related to the Massera-Schäffer, Dunkl-Williams and Maligranda-Mercer inequalities are given. Some bounds for the quantity \( \|x/y\| - y/\|x\|\) with \( x, y \in X \setminus \{0\} \), are also provided.


Keywords and phrases: Normed linear spaces, Triangle Inequality, Dunkl-Williams inequality, Massera-Schäffer inequality.

REFERENCES