

LINEAR PRESERVERS OF TWO-SIDED RIGHT MATRIX MAJORIZATION ON \mathbb{R}_n

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ABSTRACT. A nonnegative real matrix $R \in \mathbf{M}_{n,m}$ with the property that all its row sums are one is said to be row stochastic. For $x, y \in \mathbb{R}_n$, we say x is right matrix majorized by y (denoted by $x \prec_r y$) if there exists an n -by- n row stochastic matrix R such that $x = yR$. The relation \sim_r on \mathbb{R}_n is defined as follows. $x \sim_r y$ if and only if $x \prec_r y \prec_r x$. In the present paper, we characterize the linear preservers of \sim_r on \mathbb{R}_n , and answer the question raised by F. Khalooei [Wavelet Linear Algebra **1** (2014), no. 1, 43–50].

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