1 Right gw-majorization on $\mathbf{M}_{n,m}$

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Let $\mathbf{M}_{n,m}$ be the set of all $n \times m$ matrices with entries in $\mathbb{F}$, where $\mathbb{F}$ is the field of real or complex numbers. An $n \times n$ matrix R is said to be a g-row stochastic matrix if Re=e, where $e = (1, ..., 1)^t \in \mathbb{F}^n$. We introduce the right gw-majorization on $\mathbf{M}_{n,m}$ which it say that an $n \times m$ matrix A is right gw-majorized by an $n \times m$ matrix B and denoted by $B \succ_{rwg} A$, if there exits a g-row stochastic matrix R such that A=BR. In this paper we study some properties of the right gw-majorization and finally all linear operators that strongly preserve the right gw-majorization will become characterized.