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SOME INEQUALITIES FOR WEIGHTED POWER MEAN

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Abstract. In this paper, we mainly present an inequality for weighted power mean, which extend a key result of I. H. Gümüş, S. Furuichi, H. R. Moradi and M. Sababheh. To be more precise,

$$A\sharp_{p,v}B \leqslant \frac{\left(m^p\nabla_\lambda M^p\right)^{\frac{1}{p}}}{m\sharp_\lambda M}A\sharp_v B,$$

where $p>0$, $v\in[0,1]$, $\lambda=\min\{v,1-v\}$ and $0<mI\leqslant A,B\leqslant MI$ for some scalars $m<M$. As applications, we obtain some inequalities for Hilbert-Schmidt norms.

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