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On the composition of quasiconvex functions and the transposition

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Abstract: If $G:\mathbb{R}^{n\times m}\to\bar\mathbb{R}:=\mathbb{R}\cup\{+\infty\}$ is a convex, polyconvex or rank-one convex function, then the function $g:\mathbb{R}^{m\times n}\to\bar\mathbb{R}$ defined as $g(A)=G(A^t)$ preserves convexity, polyconvexity, or rank-one convexity, respectively. The paper shows that this does not hold in general for quasiconvexity provided $n\ge 2$ and $m\ge 3$.

Keywords: Polyconvexity, quasiconvexity, rank-one convexity

Classification (MSC2000): 26B25, 49R99

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