

On Some Quasiconvex Functions with Linear Growth

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Abstract: We establish (i) that the quasiconvexification of the distance function to any closed (possibly unbounded) subset of the space of conformal matrices E_{∂} in $M^{2 \times 2}$ is bounded from below by the distance function itself, that is, $Q_{\text{dist}}(\cdot, K) \geq c \cdot \text{dist}(\cdot, K)$, where $c > 0$ is a constant independent of K ; (ii) some estimates of quasiconvexifications of the distance function to a closed subset of $M^{2 \times 2}$ which is 'supported' by E_{∂} ; (iii) $Q_{\text{dist}}^p(\cdot, K) = Q_{\text{dist}}^p(\cdot, Q_p(K))$ for any $p \geq 1$ and any closed $K \subset M^{N \times n}$; (iv) for some nonconvex $K \subset M^{2 \times 2}$, $Q_{\text{dist}}(\cdot, K)$ is homogeneous of degree one, conjugate invariant and convex, and $Q_1(K) = C(K)$.

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