Summary: In this article, we want to find a map \( u : \overline{\Omega} \to \mathbb{R}^n \) solving, in \( \Omega \), the equation

\[
u^*(H) = G \text{ i.e. } (Du)^t H(u) Du = G
\]

and coupled, on \( \partial \Omega \), either with the Dirichlet-Neumann problem

\[
u = \varphi \text{ and } Du = D\varphi
\]

or the purely Dirichlet problem

\[
u = \varphi
\]

where \( \Omega \subset \mathbb{R}^n \) is a bounded open set, \( G, H : \mathbb{R}^n \to \mathbb{R}^{n \times n} \) and \( \varphi : \overline{\Omega} \to \mathbb{R}^n \) are given. We discuss the case where \( G \) and \( H \) are not necessarily symmetric or skew-symmetric, but have invertible symmetric parts.

MSC:
53-XX Differential geometry

Keywords:
pullback equation; Dirichlet problem; Dirichlet-Neumann problem

Full Text: DOI

References:

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