

Rotationally Symmetric Solutions for Prescribed Schouten Tensor

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Abstract. We consider the Euclidean space (\mathbb{R}^n, g) , with $n \geq 3$ and $g_{ij} = \delta_{ij}$, and non-diagonal tensors $T = \sum_{i,j} f_{ij}(x) dx_i \otimes dx_j$. Assuming that the solutions are rotationally symmetric, we find the necessary and sufficient conditions for the existence of a metric \bar{g} conformal to g , such that the Schouten tensor \bar{g} , is equal to T . From the obtained results, we show that for certain functions h , defined in $\mathbb{R}^n \setminus \{0\}$, there exist complete metrics \bar{g} , conformal to the Euclidean metric g , whose curvature $\sigma_2(\bar{g}) = h$.