Mikhaĭlichenko, G. G.

Bimetric physical structures of rank $(n+1,2)$**.** (English. Russian original) Zbl 0828.53045

Sib. Math. J. 34, No. 3, 513-522 (1993); translation from Sib. Mat. Zh. 34, No. 3, 132-143 (1993).

The author gives a concise definition of an s-metric physical structure of rank $(n+1,m+1)$ where $s \geq 1$ and $n \geq m \geq 1$ are integer numbers. This is a kind of smooth and nondegenerate s-compact real function defined on an open dense subset in $\mathfrak{m} \times \mathfrak{n}$ where $\mathfrak{m}$ and $\mathfrak{n}$ are smooth manifolds of dimensions sm and sn, respectively. The author completes the classification of bimetric physical structures of rank $(n+1,2)$, $n \geq 1$, the case of a 2-dimensional manifold $\mathfrak{m}$ and a $2n$-dimensional manifold $\mathfrak{n}$, i.e. the case $s = 2$ and $m = 1$, by using an old theorem of S. Lie obtained in 1883.

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MSC:

53C30 Differential geometry of homogeneous manifolds
22E15 General properties and structure of real Lie groups
70A05 Axiomatics, foundations

Keywords:

two-set geometry; s-metric physical structure; classification of bimetric physical structures