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Abstracts of Short Communications and Posters

Section:

5. Differential Geometry and Global Analysis

1991 MS Classification: 53

Leichtweiß Kurt, Universität Stuttgart, Germany:

On the inifinitesimal affine rigidity of ellipsoids in the n-space

Due to R. Schneider 1967 an ellipsoid E in the affine space $\mathbb{A}^n$ is *affinely rigid*, i. e. every other ovaloid F in $\mathbb{A}^n$ with the same affine Blaschke metric as for E equals E up to an equiaffine motion of E. Due to M. Koszlowski 1985 resp. W. Blaschke 1923 for $n = 3$, ellipsoids are moreover S-rigid resp. infinitesimally S-rigid in the sense of equal resp. infinitesimally equal affine scalar curvature S (unknown up to now for $n > 3$). – It will be proved that ellipsoids in $\mathbb{A}^n$ are also infinitesimally S-rigid for any n.

Reference: W. Blaschke, Vorlesungen über Differentialgeometrie II, *Springer Verlag Berlin* 1923, 90.