



Geometry Webinar AmSur/AmSul

Conformal Killing Yano 2-forms on Lie groups

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Resumo: A differential p -form η on a n -dimensional Riemannian manifold (M, g) is called Conformal Killing Yano (CKY for short) if it satisfies for any vector field X the following equation

$$\nabla X\eta = 1p+1\iota_X d\eta - 1n-p+1X^* \wedge d^*\eta,$$

where X^* is the dual 1-form of X , d^* is the codifferential, ∇ is the Levi-Civita connection associated to g and ι_X is the interior product with X . If η is coclosed ($d^*\eta=0$) then η is said to be a Killing-Yano p -form (KY for short). We study left invariant Conformal Killing Yano 2-forms on Lie groups endowed with a left invariant metric. We determine, up to isometry, all 5-dimensional metric Lie algebras under certain conditions, admitting a CKY 2-form. Moreover, a characterization of all possible CKY tensors on those metric Lie algebras is exhibited.