

Locally Homogeneous Aspherical Sasaki Manifolds

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Abstract

Let G/H be a contractible homogeneous Sasaki manifold. A compact locally homogeneous aspherical Sasaki manifold $\Gamma \backslash G/H$ is by definition a quotient of G/H by a discrete uniform subgroup $\Gamma \leq G$. We discuss the relation between the isometry group $\text{Isom}(G/H)$ for a Sasaki metric of G/H and the pseudo-Hermitian group $\text{Psh}(G/H)$ for the Sasaki structure of G/H . In addition, we show that a Sasaki Lie group G , when $\Gamma \backslash G$ is a compact locally homogeneous aspherical Sasaki manifold, is either the universal covering group of $\text{SL}(2, \mathbb{R})$ or a *modification* of the Heisenberg nilpotent Lie group with its natural Sasakian structure. This is a joint work with Oliver Baues.