

A CONSTRUCTION OF SASAKIAN LIE ALGEBRAS WITH TRIVIAL CENTER ARISING FROM EXACT KÄHLER LIE ALGEBRAS

1. ABSTRACT

It is well known that in any Sasakian Lie algebra its center is either trivial or has dimension 1, and in this case it is generated by the Reeb vector field ξ . It was shown in [AFV] that Sasakian Lie algebras with non trivial center are central extensions of Kähler Lie algebras. Here we will exhibit a method to construct a $(2n + 1)$ -dimensional Sasakian Lie algebra with trivial center, beginning with a $(2n - 2)$ -dimensional Kähler Lie algebra with exact Kähler form. Moreover, we show that any Sasakian Lie algebra with trivial center such that $\dim(\text{Im ad}_\xi) = 2$ is obtained by this construction. We also show that the Sasakian Lie algebras in this family are never unimodular.