A RESTRICTION ON THE SCHUR MULTIPLIER OF NILPOTENT LIE ALGEBRAS

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Abstract. An improvement of a bound of Yankosky (2003) is presented in this paper, thanks to a restriction which has been recently obtained by the authors on the Schur multiplier $M(L)$ of a finite dimensional nilpotent Lie algebra $L$. It is also described the structure of all nilpotent Lie algebras such that the bound is attained. An important role is played by the presence of a derived subalgebra of maximal dimension. This allows precision on the size of $M(L)$. Among other results, applications to the non-abelian tensor square $L \otimes L$ are illustrated.

Key words. Schur multiplier, Nilpotent Lie algebras, Derived subalgebra, Non-abelian tensor product.

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