ℤ-graded Hom-Lie superalgebras

By MOHAMMAD REZA FARHANGDOOST (Shiraz)
and AHMAD REZA ATTARI POLSANGI (Shiraz)

Abstract. In this paper, we introduce the notion of ℤ-graded Hom-Lie superalgebras, and we show that there is a maximal (resp., minimal) ℤ-graded Hom-Lie superalgebra for a given local Hom-Lie superalgebra. Morever, we introduce the invariant bilinear forms on a ℤ-graded Hom-Lie superalgebra and prove that a consistent supersymmetric α-invariant form on the local part can be extended uniquely to a bilinear form with the same property on the whole ℤ-graded Hom-Lie superalgebra. Furthermore, we check the condition in which the ℤ-graded Hom-Lie superalgebra is simple.

MOHAMMAD REZA FARHANGDOOST &
AHMAD REZA ATTARI POLSANGI
DEPARTMENT OF MATHEMATICS
COLLEGE OF SCIENCES
SHIRAZ UNIVERSITY
P. O. BOX 71457
44776 SHIRAZ
IRAN