Filiform Lie algebras of order 3.

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Abstract: *The aim of this work is to generalize a very important type of Lie algebras and superalgebras, i.e. filiform Lie (super)algebras, into the theory of Lie algebras of order F. Thus, the concept of filiform Lie algebras of order F is obtained. In particular, for F = 3 it has been proved that by using infinitesimal deformations of the associated model elementary Lie algebra it can be obtained a class of filiform elementary Lie algebras of order 3, analogously as that occurs into the theory of Lie algebras (Vergne, 1970). Also we give the dimension, using an adaptation of the sl(2;C)-module Method, and a basis of such infinitesimal deformations in some generic cases.*