NON-LINEAR ALGEBRAS

VICTOR KAC

ABSTRACT

By a non-linear algebra I mean an algebra where also non-linear terms are allowed, for example [e,f]=G(h), where G is a polynomial. I will discuss two settings: non-linear Lie algebras (easy, QM setting), and non-linear Lie conformal algebras (much more difficult, QFT setting). The latter case provides a rigorous framework for what physicists call W-algebras.