# Unitary representations of minimal W-algebras

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## 1. Abstract

To each non-zero nilpotent orbit of a simple finite-dimensional Lie superalgebra g with a non-degenerate invariant bilinear form one associates a simple vertex algebra, called a quantum affine W-algebra. In the simplest case g=sl_2 one gets the Virasoro vertex algebra.
For the smallest simple Lie superalgebras g one gets by this construction all N=1,2,3,4, and big N=4 superconformal algebras.
I will explain classification of unitary representations of W-algebras, associated to nilpotent orbits of minimal dimension in the even part of g, which cover all the above examples.
This is a joint work with P. Moseneder Frajria and P. Papi.