

Tensor categories of modules of W-algebras

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1. Abstract

Let V be an affine vertex algebra of some simple Lie algebra \mathfrak{g} and some level. Let KL be the category of V -modules whose conformal weight spaces are integrable \mathfrak{g} -modules. A famous result of Kazhdan and Lusztig tells us that for almost all levels KL is a braided tensor category and as such equivalent to a category of weight modules of the quantum group $U_q(\mathfrak{g})$ of \mathfrak{g} for suitable q .

It is desired to have similar results for suitable categories of W-algebras and superalgebras. In particular one wants to understand tensor structure and equivalences to quantum supergroups.

I will outline how to prove such statements and illustrate this in some examples.