

# Tensor categories for vertex operator algebra extensions

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In this talk, I will present a few recent developments relating the tensor categories for a vertex operator algebra and a conformal extension. These results build on the work of Huang, Kirillov and Lepowsky which shows how the representation categories of such extensions are related as abelian categories. I will explain how this relation can be strengthened to incorporate fusion products, culminating in a monoidal induction functor. Time permitting, I will present a selection of ensuing applications of these methods, namely, to Heisenberg cosets, to  $\mathfrak{osp}(1|2)$ -theories etc.

*This talk will be based on recent works joint with T. Creutzig, J. Frohlich, R. McRae, A. R. Linshaw, D. Ridout.*