Topological defects in vertex operator (super)algebras

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Abstract:

Topological defects in quantum field theory have received considerable attention in the last few years as generalizations of the concept of symmetry. In the context of two dimensional conformal field theory, the properties of topological defects have been studied since the 90s, in particular in a series of works by Froehlich, Fuchs, Runkel and Schweigert. In this talk, I will discuss some applications of these ideas from physics to the theory of vertex operator (super-)algebras. In particular, I will describe some recent results about topological defects in the Frenkel-Lepowsky-Meurman Monstrous module, as well as in the Conway module, i.e. the holomorphic vertex operator superalgebra at central charge 12 with no weight 1/2 states. Finally, I will speculate about possible generalizations of the Moonshine conjectures.

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