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# Quasi-particles in Conformal Field Theory

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**Abstract**

The conformal field theories that are completely solvable, the so-called minimal models, are characterized by the complete reducibility of their modules. In these modules, there are special linear relations among the states, called the singular vectors. States are organized into highest-weight (irreducible) representations of the Virasoro algebra. The characters (which capture the state content of each module) are easily constructed from the representation theory, as infinite sums with alternating signs that follows from the subtraction of the singular vectors (by an inclusion-exclusion process). However, this description of the space of states is far from being physical. Quite remarkably, the relation between specific conformal field theories and particular statistical models (like spin chains) has led to the discovery of new expressions for the characters, which are positive definite. These entail a quasi-particle description of the space of states, via a filling process with possible restriction conditions akin to the exclusion principle. The simplest quasi-particle description, pertaining to the M(2,p) models, is illustrated, with the underlying combinatorial aspects worked out. Its conformal-field-theoretical interpretation is also presented.