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Classification of irreducible quasifinite modules over map Virasoro algebras

The Virasoro algebra plays a fundamental role in the theory of vertex operator algebras, conformal field theory, string theory, and the representation theory of affine Lie algebras. In this talk we will present a recent classification of the irreducible quasifinite modules (that is, modules with finite-dimensional weight spaces) for map Virasoro algebras (tensor products of the Virasoro algebra with a Noetherian commutative associative algebra). We will see that all such modules are tensor products of generalized evaluation modules. We also give an explicit sufficient (and, in some cases, necessary) condition for a Verma module of a map Virasoro algebra to be irreducible.