XIANGQIAN GUO, Zhengzhou University
New irreducible modules for Virasoro algebra

We construct two classes of irreducible Virasoro modules by twisting Harish-Chandra modules over the Heisenberg-Virasoro algebra using automorphisms of the Heisenberg-Virasoro algebra. Weight modules in the first class are some irreducible highest weight modules and non-weight modules in the first class are irreducible Whittaker modules. We also obtain concrete bases for these modules. This generalizes known results on Whittaker modules. The second class of modules are non-weight modules which are not Whittaker modules. We determine the irreducibility and isomorphism classes of these modules.