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Classification of irreducible weight modules with a finite dimensional weight space over twisted Heisenberg-Virasoro algebra

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摘要

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Abstract We show that the support of an irreducible weight module over the twisted Heisenberg--Virasoro algebra, which has an infinite-dimensional weight space, coincides with the weight lattice and that all nontrivial weight spaces of such a module are infinite dimensional. As a corollary, we obtain that every irreducible weight module over the twisted Heisenberg--Virasoro algebra, having a nontrivial finite-dimensional weight space, is a Harish--Chandra module (and hence is either an irreducible highest or lowest weight module or an irreducible module from the intermediate series).

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