Higher chiral homology and rationality of vertex algebras

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Abstract:

In this talk I will describe some recent results on chiral homology of chiral algebras associated with conformal vertex algebras. In particular we establish a criterion for rationality of the vertex algebra in terms of vanishing of degree 1 chiral homology of the projective line. We also relate chiral homology of tori to Hochschild homology of the Zhu algebra, establishing an isomorphism in degree 1, when the vertex algebra is classically free. Joint work with T. Cardoso, J. Guzman, R. Heluani.