

An operadic approach to vertex algebra and Poisson vertex algebra cohomology

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Abstract We translate the construction of the chiral operad by Beilinson and Drinfeld to the purely algebraic language of vertex algebras. Consequently, the general construction of a cohomology complex associated to a linear operad produces the vertex algebra cohomology complex. Likewise, the associated graded of the chiral operad leads to the classical operad, which produces a Poisson vertex algebra cohomology complex. The latter is closely related to the variational Poisson cohomology studied by two of the authors.

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