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**REIMUNDO HELUANI**, IMPA

*Cohomology of vertex algebras*

Given a vertex algebra  $V$  and its module  $M$ , I'll introduce a complex that computes the cohomology of  $V$  with coefficients in  $M$ . This cohomology theory shares some of the properties that the cohomology of Lie algebras with coefficients in modules satisfy (like computing central extensions, extensions of modules, external derivations, etc). This is joint work with B. Bakalov, A. De Sole, and V. Kac.