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C Damiolini (chiarad@princeton.edu), Department of Mathematics, Princeton University, Princeton, NJ 08540, **A. Gibney*** (angela.gibney@gmail.com), Department of Mathematics, Rutgers University, Piscataway,, NJ 08854, and **N. Tarasca**, Department of Mathematics, Virginia Commonwealth University, Richmond, 23284. *On factorization and vector bundles of conformal blocks from vertex algebras*. Preliminary report.

Modules over conformal vertex algebras give rise to sheaves of coinvariants and conformal blocks on moduli of stable pointed curves. We show that under certain natural hypotheses, these sheaves satisfy the factorization property, a reflection of their inherent combinatorial nature. As an application, we prove they are vector bundles. These provide a generalization of vector bundles defined by integrable modules over affine Lie algebras at a fixed level. Satisfying factorization is essential to a recursive formulation of invariants, like ranks and Chern classes, and to produce new constructions of rational conformal field theories. (Received September 15, 2019)