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Anil B Venkatesh* (anilbv@math.duke.edu). *Comparison of Regularization Methods for Iterated Integrals of Eisenstein Series.*

We study iterated integrals of Eisenstein series. These integrals naturally arise in studying relations between multiple zeta values that are induced by modular forms. The iterated integral can be understood as parallel transport on a vector bundle over the moduli space of elliptic curves. Using the theory of regular singular points, Hain regularizes these integrals by constructing the Deligne canonical extension of the vector bundle to a singular fiber. By comparison, Brown regularizes iterated integrals of Eisenstein series by first passing to the universal cover. We examine these two regularization methods and assess whether they coincide in all cases. (Received January 18, 2015)