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Michele Vergne* (vergne@math.jussieu.fr), 9 rue de Navarre, 75005 Paris, France. *Jump formulae for Multiple Bernoulli polynomials and Verlinde sums*. Preliminary report.

Motivated by Witten and Verlinde formulae for the volume and Riemann Roch number of some moduli space, A. Szenes studied multiple Bernoulli series and Verlinde sums, associated to a vector space V , a lattice Λ in V and a sequence Φ of elements of Λ . Such a Bernoulli series defines a periodic and locally polynomial function on V and satisfy a system of differential equations, associated to deletion and contraction in the system Φ . In a work in common with Arzu Boysal, we give formulae for the jumps across singular hyperplanes.

There is an analogous theory in the discrete case, where differential equations are replaced by difference equations. Solutions are locally quasi-polynomial functions, and the domains of quasi polynomiality are related to the zonotope constructed on Φ . (Received September 18, 2009)