1112-14-152 **Alejandro Melle-Hernández*** (amelle@ucm.es), Dept. of Algebra, Faculty of Mathematical Sciences, Complutense University of Madrid, 28040 Madrid, Spain. *Higher order generalized Euler characteristics of a complex quasi-projective manifold with a finite group action and some generating series.* Preliminary report.

Euler characteristics of a given order k is a generalization of the so-called orbifold Euler characteristic (for a space with a finite group action) introduced by physisists. For a complex quasi-projective manifold X with a finite group G action, we define a generalized Euler characteristics of order k of the pair (X, G) (a sort of their motivic versions) with values in the Grothendieck ring of complex quasi-projective varieties extended by the rational powers of the class of the affine line. The geometric description of the power structure over such a ring allows us to compute, for a fixed k, the generating series whose n coeffcient is the generalized Euler characteristics of a fixed order k of the n-wreath product orbifolds $(X^n, G^n \wr S_n)$ in terms of some local data (not depending on X) to the power -k-th generalized Euler characteristics of the pair (X, G). This talk is based on some joint works with S.M. Gusein-Zade and I.Luengo. (Received July 30, 2015)