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**S. Allen Broughton\*** ([brought@rose-hulman.edu](mailto:brought@rose-hulman.edu)). *Equivalence of Finite Group Actions on Riemann Surfaces and Algebraic Curves*. Preliminary report.

We consider conformal actions of the finite group  $G$  on a closed Riemann surface, as well as algebraic actions of  $G$  on smooth, complete algebraic curves over an arbitrary, algebraically closed field. There are several notions of equivalence of actions, the most studied of which is topological equivalence, presumably because of its close relationship to the branch locus of the moduli space. However, the notion of topological equivalence does not work well for positive characteristic. We shall discuss a replacement for topological equivalence, which we dub *equisymmetry*, that may be applied in all characteristics. The relation is induced by families of curves with  $G$ -action. After giving an overview of the various equivalence relations (conformal/algebraic, topological,  $q$ -differentials, equisymmetry) we focus on equisymmetry and its relationship to rotation constants and  $q$ -differentials. (Received January 20, 2020)