1125-20-1099   **Jay Taylor*** (`jaytaylor@math.arizona.edu`), Department of Mathematics, University of Arizona, 617 N. Santa Rita Ave., Tucson, AZ 85721. *Action of Automorphisms on Irreducible Characters of Symplectic Groups.*

In recent years a new approach has been developed to several long standing conjectures in the representation theory of finite groups; such as the McKay conjecture. These conjectures are stated for all finite groups but the recent approach has reduced these conjectures to checking certain conditions on quasisimple finite groups (often referred to as inductive conditions). This, in theory, makes the conjecture more manageable thanks to the classification of finite simple groups. However, the downside to this is that one requires information about how automorphisms act on the irreducible characters of quasisimple finite groups. In this talk we present new results in this direction concerning the finite symplectic groups $\mathrm{Sp}_2n(q)$ where q is an odd prime power. Specifically we completely describe the action of the automorphism group on the ordinary irreducible characters of these groups. Our methods quintessentially involve Kawanaka's theory of Generalised Gelfand-Graev Representations (GGGRs) and the Springer correspondence. (Received September 14, 2016)