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George Glauberman* (gg@math.uchicago.edu). *Symmetric groups and fixed points on modules: an application of group theory to topology.*

Let p be a prime. To every finite group is associated a topological space known as the p -completion of its classifying space. The Martino-Priddy conjecture states that for two groups G and H , these spaces are homotopy equivalent if and only if there is a special type of isomorphism between the Sylow p -subgroups of G and H (an isomorphism of fusion systems, e.g., elements conjugate in G are mapped to elements conjugate in H). J. Martino and S. Priddy proved the “only if” part in 1996. B. Oliver proved the converse for odd p in 2004 and $p = 2$ in 2006. In 2013, A. Chermak proved a strong generalization of the conjecture and Oliver proved an extension of Chermak’s result. Each of these four proofs relied partly on assuming the classification of finite simple groups. Recently, J. Lynd and I removed this assumption. One key step was to extend an old result about fixed points of a group G of characteristic p for p odd to the case when $p = 2$, except when G is a direct product of symmetric groups. We plan to discuss this step. (Received August 06, 2015)