1084-20-182 **Sara Jensen*** (jensen@math.wisc.edu). *On the Character Degree Simplicial Complex of a Finite Solvable Group.* Preliminary report.

The character degree simplicial complex of a finite group G has as its simplices all subsets X of $\mathrm{cd}(G) \setminus \{1\}$ satisfying $\gcd(X) > 1$. The 1-skeleton of this simplicial complex is the character degree graph of the associated group G. Historically, much has been said about what types of graphs may appear as the character degree graphs of finite groups, and similarly, much can be said about the structure of a finite group given that it has a particular graph as its associated character degree graph.

One important topological aspect of the character degree simplicial complex is its dimension, which is one less than the size of the largest simplex. Suppose that G is a finite solvable group of dimension n. Benjamin was able to obtain a quadratic bound on $|\mathrm{cd}(G)|$ in terms of n. We obtain a quadratic bound on the rank of the fundamental group of the character degree simplicial complex of G in terms of n. Although Benjamin's result implies a bound on the rank of the fundamental group of the character degree simplicial complex in terms of the dimension, the bound we obtain is much stronger. Additionally, our bound is independent of Benjamin's work. (Received August 31, 2012)