1151-20-94 **Hung Nguyen*** (hungnguyen@uakron.edu), Department of Mathematics, The University of Akron, Akron, OH 44325, and **Yong Yang** (yang@txstate.edu), Department of Mathematics, Texas State University, San Marcos, TX 78666. *Abelian subgroups and the largest representation of a finite group.*

Gluck's conjecture asserts that the index of the Fitting subgroup $F(G)$ in a finite solvable group G is bounded above by $b(G)^2$, where $b(G)$ denotes the largest degree of an irreducible representation of G. More recently, Cossey et al. provided considerable evidence showing that the inequality $|G : F(G)| \leq b(G)^3$ might be true for every finite group G. This, if true, would imply that every G has an abelian subgroup of index at most $b(G)^7$.

In this talk we show that a certain portion of an abelian subgroup or nilpotent subgroup is also bounded in terms of the largest degree. In particular, if H is an abelian subgroup of a finite group G and let π be the set of prime divisors of $|H|$, then $|HO_\pi(G)/O_\pi(G)| \leq b(G)$. This is a joint work with Yong Yang. (Received August 10, 2019)