

1136-20-88

**J.P. Cossey\*** ([cossey@uakron.edu](mailto:cossey@uakron.edu)), Department of Mathematics, University of Akron, Akron, OH 44325-4002. *Blocks of small defect in simple groups and Brauer character degrees in finite groups.*

Let  $G$  be a finite group. Lewis and Gagola showed that  $G$  is nilpotent if and only if  $\chi(1)^2$  divides  $|G : \ker(\chi)|$  for every ordinary irreducible character  $\chi$  of  $G$ . In this talk we examine the analogous question for Brauer characters, and prove a similar result. Along the way, we prove an interesting result about blocks of relatively small defect for symmetric and alternating groups, and use this to prove the existence of blocks of relatively small defect for all simple groups.

This is joint work with Xiaoyou Chen, Mark Lewis, and Hung Tong-Viet. (Received January 03, 2018)