

1151-20-105

Sarah Croome* (scroome@kent.edu) and **Mark Lewis**. *Character codegrees of p -groups*.

For a p -group G and an irreducible character χ of G , the codegree of χ is given by $|G : \ker(\chi)|/\chi(1)$. We investigate the relationship between the codegrees and nilpotence class of p -groups. If the set of codegrees of the irreducible characters of G has order 4, and G either has coclass at most 3, largest character degree p^2 , or $|G : G'| = p^2$, then the nilpotence class of G is at most 4. Similar conditions exist which guarantee the existence of p^2 as a codegree of G . If $|G| = p^n$ then $\text{cod}(G)$ contains all powers of p up to p^{n-1} if and only if G satisfies one of three cases in which G has maximal class or nilpotence class at most 2. We also find families of maximal class groups which have consecutive p -power codegrees. (Received August 12, 2019)