1007-57-226 **Jay J Zimmerman*** (jzimmerman@towson.edu), Department of Mathematics, Towson University, 8000 York Road, Towson, MD 21252. *The genus distribution for odd order groups.*

Suppose that G is an odd order group with symmetric genus of the form $2^k + 1$ for an integer k or $p+1$ for an odd prime p. Then G is the semidirect product of Z_m by Z_n, where m and n are relatively prime. The genus action is given by a triangle group $\Gamma(r,s,t)$ satisfying the condition $|G| = lcm(r,s,t)$, except if G is the image of $\Gamma(5,5,5)$ with genus $p+1$ for $p \equiv 1 \, mod \, 10$. Unfortunately, there is no general relationship between the genus σ and the integers m and n. However, in the case, Z_n has a Sylow p-subgroup, that acts fixed point freely on Z_m and G is not the image of $\Gamma\,(5,5,5)$, then m and n satisfy the equation

$$\sigma = \left(\frac{m-1}{2}\right)(n-2).$$

It is easy to show that for an odd order group G with genus of the form $g = p+1$, the order of G satisfies $2(g-1) \leq |G| \leq 5(g-1)$. The metacyclic groups with odd order smaller than 1000 all have Sylow subgroups of Z_n acting fixed point freely on Z_m. Thus for $g < 200$ of the form $p+1$, we can decide if g is the genus of any odd order group. (Received February 22, 2005)