

Speaker: Dr John Cosgrave (<http://staff.spd.dcu.ie/johnbcos/>)

Title: Extensions of the Gauss-Wilson theorem

Time: 5:00PM

Date: Wed 26th March 2008

Location: Mathematical Sciences Seminar Room

Abstract

Karl Dilcher and I have made the first extension of the G-W theorem since the appearance of Gauss' Disquisitiones. Defining $N_n!$ - the 'Gauss factorial' of N with respect to n - to be the product of the residue classes in $[1, N]$ that are relatively prime to n , we have given a complete determination of the order of $(n-1/2)_n! \pmod n$. This is a composite modulus extension of Mordell's 1961 result concerning the order of $(p-1/2)! \pmod p$ (prime p).

I will outline work-in-progress concerning the order of $(n-1/M)_n! \pmod n$ for $M = 3$ and 4 , introduce a new class of primes (Gauss-4 primes), and outline a number of open problems.

(This talk is part of the [K-Theory, Quadratic Forms and Number Theory](#) series.)