NUMBER THEORY SEMINAR

The multiplicative orders of certain Gauss factorials

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<u>ABSTRACT</u>:

Departing from the well-known Wilson's Theorem of elementary number theory and a generalization due to Gauss, I will discuss more general "Gauss factorials". These are products of integers from 1 to $(n-1)/M$ (mod n) and relatively prime to n, where $n \equiv 1 \pmod{M}$. In particular, I will present results on the multiplicative orders (mod n) of these products, where n is a power of a prime and $M = 2$, 3, 4 and 6. Connections with certain Diophantine equations will also be discussed.

Any questions, please email: rnoble@mathstat.dal.ca.