1116-11-2919 **Sandi Xhumari*** (sandi.xhumari@uconn.edu). *Generalized Gauss sums: congruences and p-adic properties.*

The Gross-Koblitz formula expresses Gauss sums over finite fields essentially as a product of values of the p-adic Gamma function at rational numbers, and it is a p-adic lifting of Stickelberger's congruence for Gauss sums. In this talk I will outline a proof of the Gross-Koblitz formula by Dwork and Lang. It relies on a differential operator whose index on formal power series and overconvergent p-adic power series are not the same. I will then discuss how these ideas extend to generalized Gauss sums. (Received September 23, 2015)