

SPEAKER: Nickolas Andersen (Urbana-Champaign)

TITLE: Kloosterman sums and Maass cusp forms of half-integral weight

ABSTRACT: Kloosterman sums play an important role in modern analytic number theory. I will give a brief survey of what is known about the classical Kloosterman sums and their connection to Maass cusp forms of weight 0 on the full modular group. I will then talk about recent progress toward bounding sums of Kloosterman sums of half-integral weight (joint with Scott Ahlgren) where the estimates are uniform in every parameter. Among other things, this requires us to develop a mean value estimate for coefficients of Maass cusp forms of half-integral weight. As an application, we obtain an improved estimate for the classical problem of bounding the size of the error term in Rademacher's formula for the partition function.