

# Number Theory Seminar

Friday, September 4th, 2020

11:00 am on Zoom

**Steve Lester**

King's College London

## Quantum variance for dihedral Maass forms

### ABSTRACT

Motivated by connections with mathematical physics, a major topic within the analytic theory of automorphic forms is their mass distribution. One problem in this direction is to compute the *quantum variance*, which describes how far away the  $L^2$ -mass of a typical form is from being equidistributed. In this talk, I will describe some recent joint work with Bingrong Huang (Shandong), in which we compute the quantum variance over the family of dihedral Maass forms, which is a distinguished, sparse subset of Maass forms. In particular, the leading order constant in our formula for the quantum variance includes a geometric factor, which is consistent with a prediction from the physics literature, as well as subtle arithmetic factors.