

Random Kleinian groups

Gaven Martin

Massey University

This talk seeks to motivate and explore what it means to choose a random subgroup of $SL(2, \mathbb{C})$. Then we seek to identify a geometrically natural probability distribution from which we can make meaningful calculations and discuss the probability that a finitely generated subgroup is discrete particularly in the case of two-generator subgroups. An interesting special case concerns groups generated by two parabolics where precise answers are possible. Fixing the genus of a punctured surface then allows us to think about random conformal structures. The easiest case is the punctured torus where there is a very natural probability distribution given by looking at random ideal quadrilaterals and connecting this to a Gaussian like distribution on the moduli space allows us to compute the expected value of geometric invariants, such as the shortest geodesic and the distance to the origin in the Teichmüller metric.
