

abstract

SPECIAL ANALYSIS/PROBABILITY SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The large-time behavior of the return probabilities of a random walk is controlled by the behavior of the Green's function $G_r(x,y)$ at the radius $r=R$ of convergence. For nearest neighbor random walks on virtually free groups it is known that the Green's function is algebraic, and that the singularity at the radius of convergence is of square-root type. For other Fuchsian groups, however, the Green's function is likely not algebraic.

Nevertheless, we show that for simple random walk on a surface group of large genus the singularity is still of square-root type. A number of interesting related results concerning the behavior of $G_R(x,y)$ as y approaches the geometric boundary are obtained:

- (1) $G_R(x,y)$ decays exponentially in distance $d(x,y)$.
- (2) Ancona's inequalities persist at $r=R$.
- (3) The Martin boundary for R -potentials coincides with the geometric boundary.