

*A Mini Courses on  
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## **Poisson Boundary of a Random Walk**

**Behrang Forghani**

*University of Ottawa*

*Canada*

The notion of the Poisson boundary in the context of locally compact groups was introduced by Furstenberg in 60's. The Poisson boundary has very important role to study the structure of a group. For example, the triviality of Poisson boundary is equivalent to the amenability of group.

In this mini course, we give the definition of the Poisson boundary of a countable group. As examples, the Poisson boundary of abelian groups and more generally nilpotent groups will be discussed. Later, we will talk about the entropy and asymptotic entropy of a random walk on a group. We investigate the interrelation between the entropy and the Poisson boundary.

For instance, under the mild conditions, the triviality of Poisson boundary is equivalent to zero asymptotic entropy. As application, we will talk about the Poisson boundary of hyperbolic groups (free groups).