

## THE DIRICHLET SERIES OF A PROFINITE GROUP

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### Abstract

Given a finitely generated profinite group  $G$ , one may associated to  $G$  a Dirichlet series  $P_G(s)$  interpolating the probability that a random  $s$ -tuple generates the group  $G$  topologically. The reciprocal of  $P_G(s)$  is usually called *the Probabilistic Zeta Function* of the group  $G$ . In this talk, I will first present a brief survey of the subject, then I will present some results concerning the finiteness of the group  $G$  from the rationality of  $P_G(s)$ . I will then end up with some open problems.

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