

# Ihara zeta functions of irregular graphs: The Good, the Bad, and the Ugly

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007 Kemeny Hall, 4:00 pm  
(Tea 3:30 pm 300 Kemeny Hall)

## Abstract

We will define and discuss Ihara zeta functions of graphs starting with a quick review of some useful graph theory terminology. After exploring what makes these zeta functions at once both pleasant and rather nasty, we will visit two traditional lines of inquiry—attempts to mirror Riemann zeta results and attempts to extract information about the graph. We will end with a discussion of why Ihara zeta functions of directed graphs are worthy of consideration.

While touching upon several different areas of mathematics (including graph theory, linear algebra, number theory, complex analysis, topology), the talk will be accessible with no body of prior knowledge required to understand the general concepts.