



Hamilton Institute

Markov Chains, Directed Graphs,
and the Kemeny Constant

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Abstract

For an irreducible stochastic matrix T , the Kemeny constant $K(T)$ measures the expected time to mixing of the Markov chain corresponding to T . We begin with a brief introduction to the Kemeny constant, then we address the following question: given a strongly connected directed graph D , consider the set of stochastic matrices whose directed graph is subordinate to D ; what is the minimum value of K taken over that set? We find that minimum value, and also characterise the matrices attaining that minimum value for K . The results are established via a mix of matrix theoretic and graph theoretic tools.

Venue: Seminar Room, Hamilton Institute, Science Building,
NUI Maynooth

Time: 11.00am - 12.00noon (followed by tea/coffee)

Travel directions are available at www.hamilton.ie