

Zero forcing number of random and pseudorandom graphs

Thomas Kalinowski *

Nina Kamčev †

Benny Sudakov ‡

Abstract

A subset S of initially infected vertices of a graph G is called *forcing* if we can infect the entire graph by iteratively applying the following process. At each step, any infected vertex which has a unique uninfected neighbour, infects this neighbour. The *forcing number* of G is the minimum cardinality of a forcing set in G . It was introduced independently as a bound for the minimum rank of a graph, and as a tool in quantum information theory.

This talk focuses on determining the forcing number of the random graph. Furthermore, we will state our bounds on the forcing number of pseudorandom graphs and related open problems.

*School of Mathematical and Physical Sciences, University of Newcastle, Callaghan, NSW 2308, Australia.
Email: thomas.kalinowski@newcastle.edu.au.

†Department of Mathematics, ETH, 8092 Zurich. Email: nina.kamcev@math.ethz.ch.

‡Department of Mathematics, ETH, 8092 Zurich. Email: benjamin.sudakov@math.ethz.ch.