Marius Somodi* (somodi@uni.edu), Department of Mathematics, University of Northern Iowa, Cedar Falls, IA 50614, and Paymun Bayati, Department of Mathematics, University of Northern Iowa, Cedar Falls, IA 50614. Zeta function of cones over regular graphs.

We present a formula of the Ihara zeta function of a cone over a regular graph that involves the spectrum of the adjacency matrix of the cone. Using this formula we characterize the cones that satisfy the graph theory Riemann hypothesis and identify properties of the cone that can be determined using the zeta function. (Received November 24, 2010)