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**Christopher K. Storm\*** ([cstorm@dartmouth.edu](mailto:cstorm@dartmouth.edu)). *Applications of hypergraph zeta functions.*

The adjacency matrix of two  $k$ -regular graphs have the same spectra if and only if the graphs have the same Ihara-Selberg zeta function. We give a generalization of the zeta function to hypergraphs, which, when viewed as a new graph zeta function, can distinguish  $k$ -regular graphs. We conclude with an example of Stark and Terras of two 3-regular graphs with the same Ihara-Selberg zeta function but which we can distinguish easily in this manner. (Received September 03, 2006)