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Christopher K. Storm* (cstorm@dartmouth.edu). *The zeta function of a hypergraph.*

We generalize the Ihara-Selberg zeta function to hypergraphs in a natural way. Hashimoto's factorization results for biregular bipartite graphs apply, leading to exact factorizations. Within this framework, the zeta function of a (d, r) -regular hypergraph satisfies a modified Riemann hypothesis if and only if the hypergraph is Ramanujan in the sense of Winnie Li and Patrick Solé. (Received September 03, 2006)