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Lior Alon, Ram Band and **GREGORY BERKOLAIKO*** (gberkolaiko@tamu.edu),
Department of Mathematics, Texas A&M University, College Station, TX 77843-3368. *Universality
of nodal count statistics for large quantum graphs*. Preliminary report.

An eigenfunction of the Laplacian on a metric (quantum) graph has an excess number of zeros due to the graph's nontrivial topology. This number, called the nodal surplus, is an integer between 0 and the rank β of the graph's fundamental group. We study the frequency distribution of the nodal surplus within the countably infinite spectrum of the graph.

We conjecture that this frequency distribution converges to Gaussian in any sequence of graphs of growing β . We prove this conjecture for several special graph sequences and test it numerically for some other well-known types of graphs. An accurate computation of the distribution is made possible by a formula expressing the distribution as an integral over a high-dimensional torus with uniform measure. (Received February 18, 2021)