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Agmon metrics, exponential location, and the shape of quantum graphs

We show that the Agmon method for establishing exponential decrease of eigensolutions (or subsolutions) can be adapted to quantum graphs. As a generic matter, the rate of decay is controlled by an Agmon metric related to the classical Liouville-Geen estimate for the line, but more rapid decay is typical, arising from the geometry of the graph. We provide additional theorems capturing this effect with alternative Agmon metrics, one adapted to a path and the other using averaging. This is joint work with Anna Maltsev of the University of Bristol, http://arxiv.org/abs/1508.06922