SPEAKER:

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TITLE:

How does the connectedness of a quantum graph affect the localization of
eigenfunctions?

ABSTRACT:

Quantum theory includes many well-developed bounds for wave-functions, which
can cast light on where they can be localized and where they are largely ex-
cluded by the tunneling effect. These include semiclassical estimates, especially
the technique of Agmon, the use of "landscape functions" based on the torsion
function, and some bounds from the theory of ordinary differential equations.
With A. Maltsev of Queen Mary University I have been studying how these
estimates of wave functions can be adapted to quantum graphs, which are by
definition networks of one-dimensional Schrdinger equations joined at vertices.