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On the heat content of a polygon.

Abstract:

Let D be a bounded, connected, open set in the plane with polygonal boundary. Suppose D has initial temperature 1 and the complement of D has initial temperature 0. We obtain the asymptotic behaviour of the heat content of D as time t goes to 0. We then apply this result to compute the heat content of a particular fractal polyhedron in \mathbb{R}^3 for small t .