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Infinite bubbles: a planar isoperimetric problem with two unbounded chambers

The dual of the classical isoperimetric problem asks which planar curve (if any) minimizes perimeter among all curves enclosing a fixed area A . The answer, perhaps unsurprisingly, is a circle. The resultant geometric figure consists of one compact chamber (the interior of the circle) and one unbounded chamber (the exterior of the circle). In this talk, we consider the generalization to more than one unbounded chamber. Furthermore, we present a classical variational solution to a simplified version of the following problem: given a fixed area A to enclose, which (if any) is the locally perimeter-minimizing configuration among all partitions of the plane into one compact chamber and two unbounded chambers?