

Minimal surfaces in the hyperbolic space

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Abstact

In the Euclidean plane, it is well known that the circular disc has the largest area among shapes with the same perimeter. More precisely the isoperimetric inequality says that the area enclosed by a curve of length L is at most $L^2/4\pi$. In this non-technical talk, I will introduce minimal surfaces of the hyperbolic space and explain a similar relation between their area and perimeter. Since the area of these surfaces is infinite, this will be a statement about its renormalisation, which was defined by Graham and Witten with strong motivation from the AdS/CFT correspondence in string theory.