

abstract

MEMBERS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The systolic inequality says that if we take any metric on an n -dimensional torus with volume 1, then we can find a non-contractible curve in the torus with length at most $C(n)$. A remarkable feature of the inequality is how general it is: it holds for all metrics.

Although the statement of the inequality is short, the proofs are difficult. The general idea of each known proof comes from a metaphor connecting the systolic problem to another area of geometry/topology. I will introduce three useful metaphors, connecting the systolic problem to geometric measure theory, topological dimension theory, and scalar curvature.