

# LOWER BOUNDS FOR HEAT TRACES

BARTŁOMIEJ SIUDEJA

Luttinger's result states that among domains with given area, the ball has the largest heat trace. Intuitively, this means that balls keep heat for the longest time. This can be restated in a scale invariant way as: the trace at time  $area * t$  is maximal for balls. We will discuss a way to modify the time by a factor  $G \geq 1$  such that trace at  $area * t/G$  is minimal for balls. This factor will depend on the shape of the domain, and it can be understood as a measure of roundness.