Young@Colloq: Quantifying simple connectivity: an introduction to the Dehn function

December-07-11
4:40 PM

$Sol_3 = \left\{ \begin{pmatrix} e^t & 0 & x \\ 0 & e^{-t} & y \\ 0 & 0 & 1 \end{pmatrix} \right\}$ $\quad dg^2 = e^{-2t}dx^2 + e^{2t}dy^2 + dt^2$

has exponential Dehn function.

Dehn(r) = the maximal minimal area bound by a curve of length r.

$Sol_3 \subset \left\{ \begin{pmatrix} e^a & 0 & x \\ 0 & e^b & y \\ 0 & 0 & 1 \end{pmatrix} \right\} = \left\{ \begin{pmatrix} e^a & x \\ 0 & 1 \end{pmatrix} \right\} \times \left\{ \begin{pmatrix} e^b & y \\ 0 & 1 \end{pmatrix} \right\} = Hyp^2 \times Hyp^2$