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Suspension flows of $SL(2)(\mathbb{Z}) \curvearrowright T^2$

#wiki/Man/R/3

Definition. Suspension flows of $SL(2)(\mathbb{Z}) \curvearrowright T^2$

From the action $SL(2)(\mathbb{Z}) \curvearrowright T^2$ we define the suspension of

$$A : T^2 \rightarrow T^2$$

to be the flow on the *mapping torus* 3-manifold

$$\frac{T^2 \times [0, 1]}{(x, 0) \sim (Ax, 1)}$$

Proposition:

elements, subgroups	eigenvalues λ, λ^{-1}	$SL(2)(\mathbb{R}) \curvearrowright \mathbb{R}^2$	$SL(2)(\mathbb{Z}) \curvearrowright T^2$	$SL(2)(\mathbb{R}) \curvearrowright \mathbb{R}H$ by isometries
$ \text{tr} = 0, 1 \iff$ finite order	$\lambda \in U(1) \setminus \{-1, 1\}$	periodic?	periodic	elliptic isometry (fixes one point)
$ \text{tr} = 2$	$\lambda \in \{-1, 1\}$		reducible; infinite order but not hyperbolic	parabolic isometry (fixes one point in boundary)
$ \text{tr} \geq 3$	$\lambda \in \mathbb{R} \setminus \{-1, 1\}$	hyperbolic	(pseudo-)Anosov	hyperbolic isometry (fixes two points in boundary)

$|\text{tr}(A)| > 2$

Current note has 0 direct children and 0 total descendants.

- stretchy
 - $GL(2)(\mathbb{Z}) \curvearrowright T^2$
 - [Suspension flows of \$SL\(2\)\(\mathbb{Z}\) \curvearrowright T^2\$](#)

And it has 3 siblings.

- stretchy
 - $GL(2)(\mathbb{Z}) \curvearrowright T^2$
 - [Arnold cat map](#) $\begin{bmatrix} 2 & 1 \\ 1 & 1 \end{bmatrix} \curvearrowright T^2$
 - $SL(2)(\mathbb{Z}) \curvearrowright T^2$
 - [Suspension flows of \$SL\(2\)\(\mathbb{Z}\) \curvearrowright T^2\$](#)