Info

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Mapping torus of the antipodal map of S^2

Definition. Mapping torus of the antipodal map of S^2 is the space

$$M_2 := \frac{S^2 \times [0,1]}{(x,0) \sim (-x,1)}$$

#wiki/Man/R/3 #wiki/Man/R/bundle

- The suspension flow of the antipodal map

$$\begin{aligned} \phi^\theta : M &\to M \\ (x,t) &\mapsto (x, t+\theta \bmod 1) \end{aligned}$$

- M_2 is a bundle

$$\begin{array}{ccccc} S^2 & \xhookrightarrow{t} & M & \to & S^1 \\ x & \mapsto & (x,t) & & \\ & & (x,t) & \mapsto & t \end{array}$$

- $$\pi_1(M_2) \cong \pi_1(S^1) \cong \mathbb{Z}$$

  and

$$\pi_n(M) \cong \pi_n(S^2)$$

- The map

$$\begin{aligned} \mathbb{R} \times S^2 &\to M \\ (t,x) &\mapsto (x,t) \end{aligned}$$

  is a Riemannian universal cover.

[1]

Current note has 0 direct children and 0 total descendants.

- stretchy
  - Mapping torus of the antipodal map of S^2

And it has 62 siblings.

- stretchy
  - Trefoil 3_1 knot
  - The only compact connected Lie group that can act faithfully on a torus is itself
  - Hecke algebras
  - $\overline{B^n}$
  - $\mathrm{BS}(1,2)$
  - $(\mathbb{C},+,\times)$
  - $D^* := D \setminus \{0\}$
  - Cantor set
  - Configuration space of N rigid points in $\mathbb{R}^3$
  - Free groups
  - $GL(2)(\mathbb{Z}) \curvearrowright T^2$
  - H^3_2
  - $[a,b]$
  - Figure 8 knot
  - Lamplighter group on $\mathbb{Z}_2$
  - $\beta\mathbb{N}$
  - $\#_2\mathbb{R}P^2$
  - $\prod_{i\in\mathbb{N}}\{1,\ldots,n_i\}$
  - $\mathbb{R}P^n$
  - $(\mathbb{Q},+,\times,<)$
  - $\mathbb{Q}_p$
  - $\overline{\mathbb{Q}}$
  - $\mathbb{Q}_{\text{constr}}$
  - $\mathbb{Q}(\xi_n)$
  - $\mathcal{O}_{\overline{\mathbb{Q}}}$
  - $(\mathbb{R},+,\times,<,\sup)$
  - Homeomorphism of $\mathbb{R}^2$ that sends $\mathbb{N}$ to a countable closed discrete subset
  - $\mathbb{R}^2 \times S^1$
  - $\mathbb{R}^n$
  - $\mathbb{R} \times S^1$
  - $\mathbb{R} \times S^2$
  - S^1
  - $S^1 \wedge S^1$
  - $S^1 \times S^n$
  - S^2 and $\mathbb{C}\boldsymbol{P}^1$
  - Mapping torus of the antipodal map of S^2
  - S^3

- S^n
- I-bundle
- Symmetric group
- $\mathbb{T}$
- T^2
- T^2_g
- $T^2_{0,0,3}$
- $\mathbb{R}^2 \setminus \{0\}$
- Three $T^2_{1,0,1}$ glued at their boundaries
- $T^2_{1,1,0}$
- T^2_2
- $T^2_g \times [0,1]$
- $\#_{\mathbb{N}} T^2$
- Thompson's group
- T^n
- 3-valent tree
- 4-valent tree
- $[0,1]^{\mathbb{N}}$ with product topology
- Whitehead manifolds
- $\mathbb{Z}$
- $\mathbb{Z}[\sqrt{m}]$
- $\mathbb{Z}[X]$
- $\mathbb{Z}^{\mathbb{N}}$
- $\mathbb{Z}[i]$
- $\mathbb{Z}[i\sqrt{5}]$

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1. differential geometry - Mapping torus of the antipodal map of $ S^2 $ - Mathematics Stack Exchange ↩