$$\mathbb{T}^d = \frac{z \in \mathbb{C}}{\overline{z} = 1} = \frac{x + iy \in \mathbb{C}}{x^2 + y^2 = 1}$$

$$\mathbb{T}^d$$

$$\uparrow$$

$$\text{hom} \quad \Big| \text{exp}$$

$$i\mathbb{R}^d$$

$$\mathbb{C} = \mathbb{R} + i\mathbb{R}$$

$$\text{exp} \Big| \text{diff}$$

$$\downarrow$$

$$\mathbb{C}^{\times} = \mathbb{R}_{>}\mathbb{T}$$

$$\exp\left(r + is\right) = {}^{r}e \; {}^{is}e = {}^{r}e \left({}^{s}\mathfrak{c} + \Leftarrow {}^{s}L\right)$$

$$\text{Ker } (\exp) = 2i\pi\mathbb{Z} = \frac{2\pi in}{\mathbb{Z} \ni n}$$

$$t = r + is \in \text{Ker } (\exp) \Longrightarrow 1 = \exp\left(t\right) \;{}_{=}\!\!\Longrightarrow \overline{\exp\left(t\right)} = \exp\left(\Re t\right) = {}^{r}e \Longrightarrow r = 0$$

$$1 = \exp\left(is\right) = {}^{s}\mathfrak{c} + \Leftarrow {}^{s}L \Longrightarrow 1 = {}^{s}\mathfrak{c}$$

$$0 = {}^{s}\mathfrak{s} \Longrightarrow s = 2in\pi$$

$$n \in \mathbb{Z}$$