ⓘ Info

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Riemann quasiconformal surfaces

Definition. The category of Riemann quasiconformal surfaces

The category of **Riemann quasiconformal surfaces**

$$\mathsf{Rqc}$$

- *objects* are Riemann surfaces
- *morphisms* are quasiconformal homeomorphisms

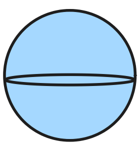
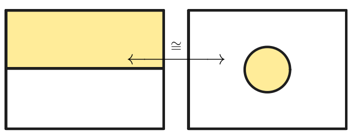
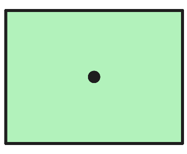
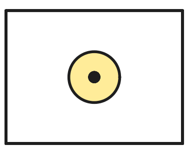
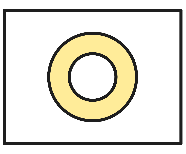
~~There are functors~~

$$ {}^2\mathsf{Riem}^+_{\mathsf{cst}\kappa} \to {}^1\mathsf{Man}_{\mathbb{C}} \to \mathsf{Rqc} \to {}^2\mathsf{ManTop}^+_{\mathbb{R}} $$

This means there is are maps

$$ {}^2\mathsf{Riem}^+_{\mathsf{cst}\kappa\cong} \to {}^1\mathsf{Man}_{\mathbb{C}\cong} \twoheadrightarrow \mathsf{Rqc}_{\cong} \twoheadrightarrow {}^2\mathsf{ManTop}^+_{\mathbb{R}\cong} $$

> **Proposition:** If two compact Riemann surfaces are homeomorphic, then they are quasiconformally isomorphic
>
> $$X_1 \cong_{\mathsf{Top}} X_2 \implies X_1 \cong_{\mathsf{Rqc}} X_2$$

${}^1\mathsf{Man}_{\mathbb{C}\cong}$	Rqc	${}^2\mathsf{ManTop}^+_{\mathbb{R}\cong}$
unique	 $\mathbb{C}P^1$	S^2
unique	 $\mathbb{C}$	$\mathbb{R}^2$
unique	 H^2_U D^2	
unique	 $\mathbb{C}^\times$	$\mathbb{R}\times S^1$
unique	 $D^\times$	
 A_r $r\in(0,1)$	annulus	
$\begin{cases}\mathbb{C} & g=1\\ \mathbb{C}^{3g-g} & g\geq 2\end{cases}$	unique	T^2_g
unique	$\mathbb{C}\setminus\{0,1\}$	$T^2_{0,3}$
	$D\setminus\left\{0,\frac{1}{2}\right\}$	
	$D\setminus\left(\frac{1}{4}D\cup\left\{\frac{1}{2}\right\}\right)$	
?	?	
	uncountable	$\mathbb{R}^2\setminus\mathbb{Z}$

Current note has 0 direct children and 0 total descendants.

- stem
  - Objects stemming from $\mathbb{R}$-spaces of dimension 2
    - Riemann quasiconformal surfaces

And it has 4 siblings.

- stem
  - Objects stemming from $\mathbb{R}$-spaces of dimension 2

- Riemann surfaces
- $\mathbb{C}$-analytic spaces of dimension 1
- Riemann quasiconformal surfaces
- Teichmuller space of surfaces