

# Possible Choices of Complex Co-ordinates for a Surface

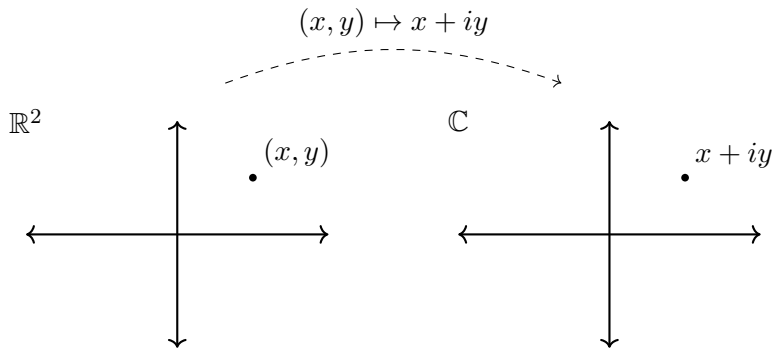
## Moduli Spaces of Riemann Surfaces

Zhaoshen Zhai

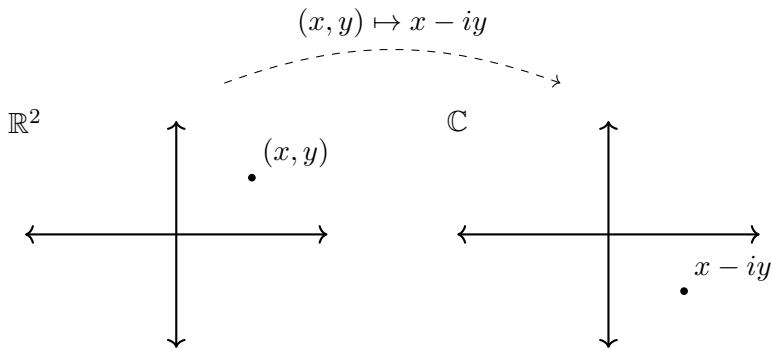
McGill University

April 23, 2023

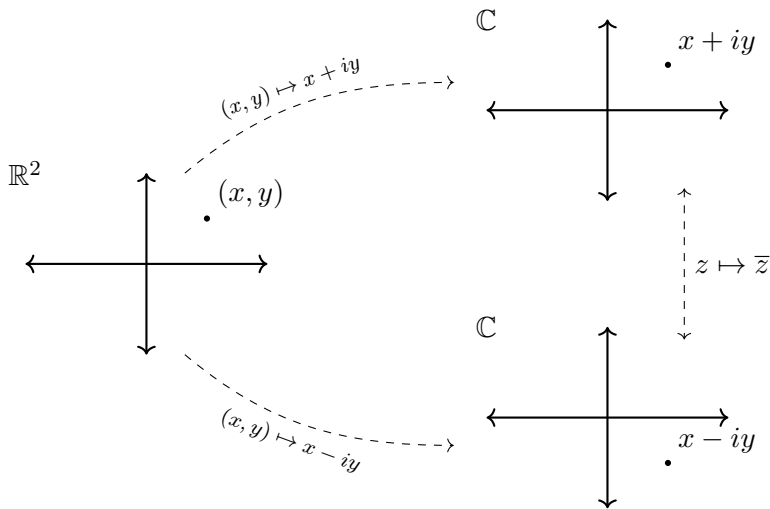
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# Refined question

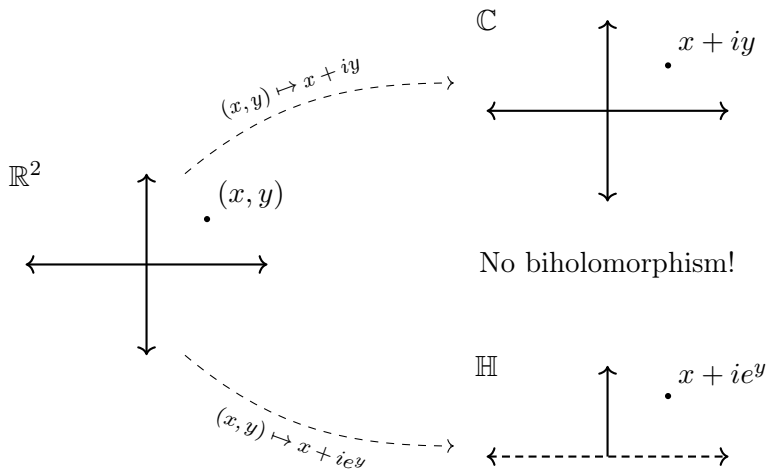
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# Refined question

~~How many complex coordinates on  $\mathbb{R}^2$ ?~~

How many complex coordinates on  $\mathbb{R}^2$  *up to biholomorphism*?

# $\mathbb{C}$ and $\mathbb{H}$



# Riemann surfaces

What about for manifolds?



# Riemann surfaces

What about for manifolds?

## Definition

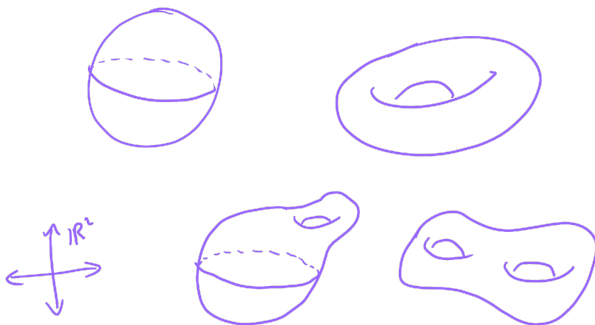
A *Riemann surface* is a connected 1-dimensional complex manifold.

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## Theorem (Classification)

*Every compact Riemann surface is classified by its genus.*

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