Possible Choices of Complex Co-ordinates for a Surface
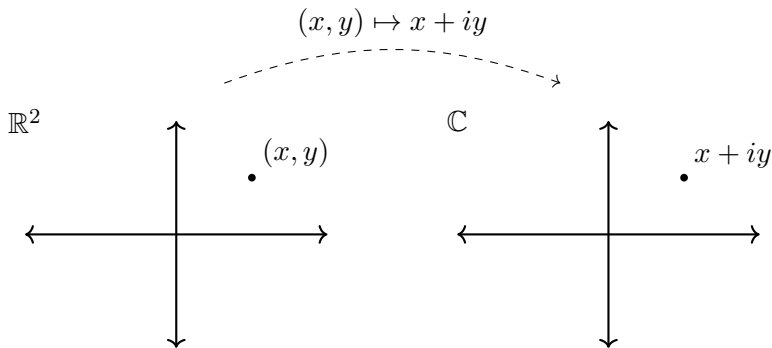## Moduli Spaces of Riemann Surfaces

Zhaoshen Zhai
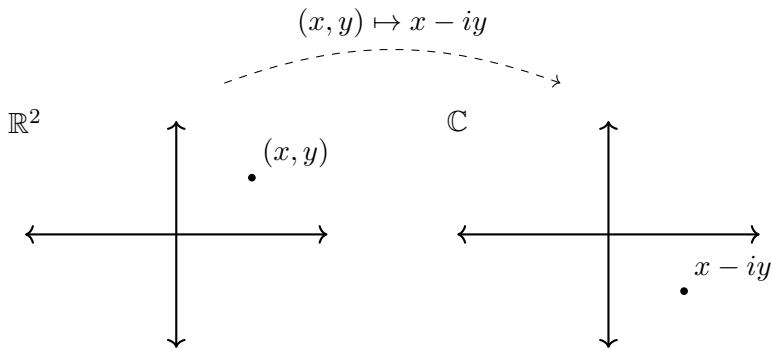
McGill University

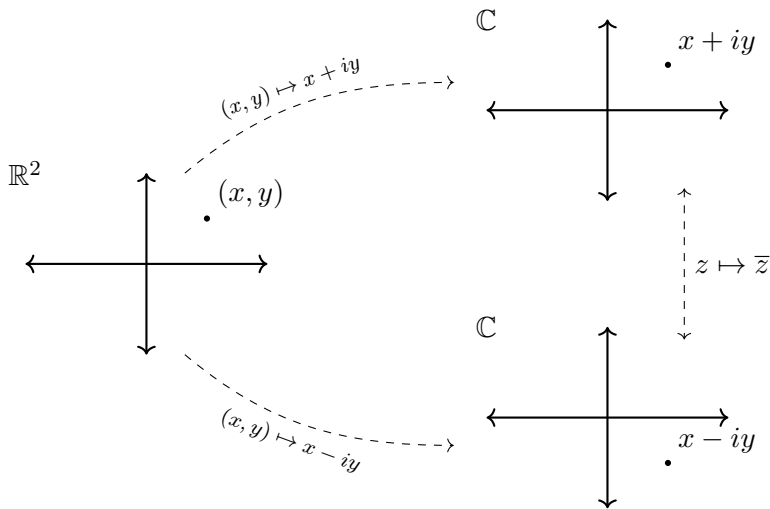April 22, 2023

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

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

$$(x, y) \mapsto x - iy$$

$\mathbb{R}^2$

(x, y)

$\mathbb{C}$

$x - iy$

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

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

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

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