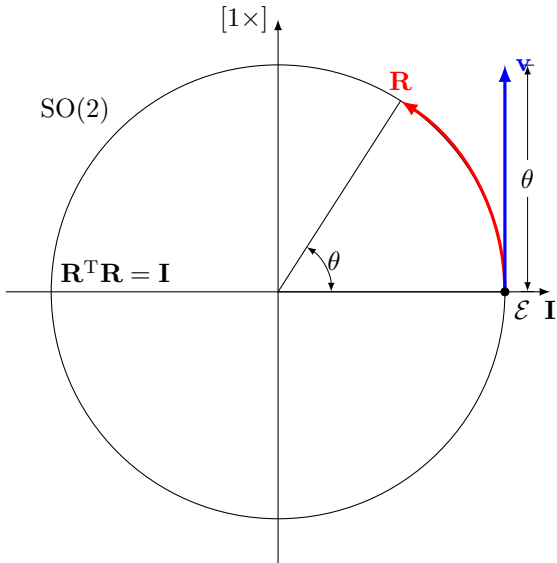


SO(2) : The 2D rotation matrices



Action:

rotate

Constraint:

Multiple operator: Lie group!

Topology:

$$\mathbf{R}^T \mathbf{R} = \mathbf{I}$$

“circle” SO(2)

Elements

$$\mathbf{R} = \mathbf{I} \cos(\theta) + [1 \times] \sin(\theta) = \begin{bmatrix} c\theta & -s\theta \\ s\theta & c\theta \end{bmatrix}$$

Inverse:

$$\mathbf{R}^T$$

Composition:

$$\mathbf{R}_1 \cdot \mathbf{R}_2$$