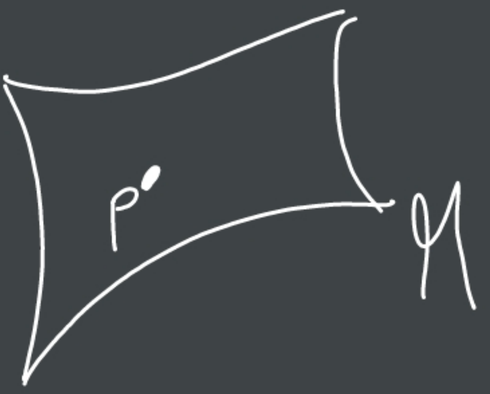
* Manifolds that consist of "matrices"!

* $GL(n,\mathbb{R}) := \{ Z \in \mathbb{R}^{n\times n} \mid \det(Z) \neq 0 \}$

$\mathbb{R}^{n\times n} \overset{?}{\cong}_{\text{set}} \mathbb{R}^{n^2}$

$(\odot)$ matrix multip

Lie-group



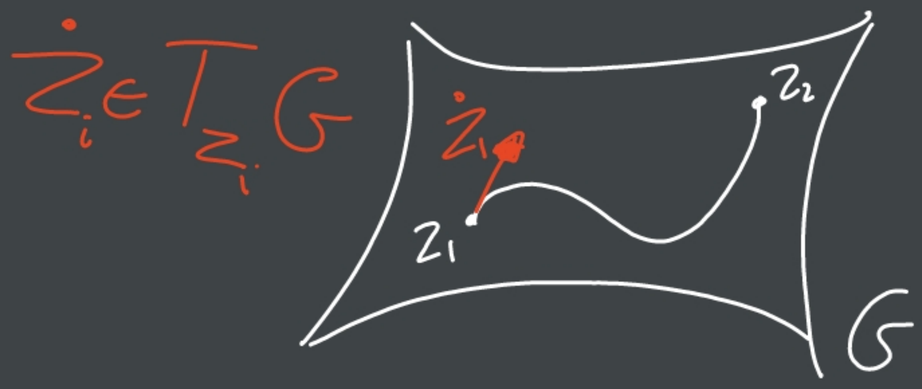
$p \in M$

$\uparrow$

$\mathbb{R}^{n\times n}$

2) Matrix Lie-group:

$$G \subseteq GL(n, \mathbb{R}) \quad , \quad \odot : G \times G \longrightarrow G$$



$z_i \in G \Rightarrow z_i$ is an invertible "matrix".


GL(n, ℝ)
O(n)
SO(n)
E(n-1)
SE(n-1)