

$$(v, A) \cdot (v', A') = (Av' + v, AA')$$



$$\neq (v+v', AA')$$

PRODUTO SEMI-DIRETO

$$\mathbb{R}^n \times \mathcal{O}(n)$$



$$\dim(\mathbb{R}^n) = n$$

$$\dim(\mathcal{O}(n)) = \frac{1}{2}n(n-1)$$

$$A \in \mathcal{O}(n)$$

$$A \in \mathcal{O}(3)$$



$$-A \in \mathcal{O}(3)$$



$$\langle Av, Aw \rangle = \langle v, w \rangle$$

$$A \in \mathcal{O}(n)$$



$$Av \times Aw = A(v \times w)$$

$$A \in \mathcal{SO}(n) \quad \text{or} \quad \text{SL}(n)$$

