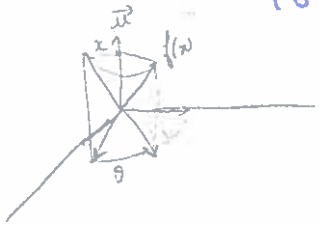
▷ $\mathcal{M}(x \mapsto \langle u|x\rangle) = {}^t U$.

▷ $f \in SO_3(E)$ $\quad f = Id_E$ ssi $\exists \mathcal{B}$ BON $\mathcal{M}_{\mathcal{B}}(f) = \begin{pmatrix} 1 & 0 & 0 \\ 0 & & \\ 0 & & R_\theta \end{pmatrix}$



Gram-Schmidt : $(u_1, \dots, u_n)$ libre

▷ $\exists!\, (v_1, \dots, v_n)$ orthogonale tq $\forall i$ $v_i - u_i \in \mathrm{Vect}(u_{i-1}, \dots, u_1)$

proj ortho de u_i sur $\mathrm{Vect}(u_{i-1}, \dots, u_1)^\perp$

normalisation

▷ $\exists!\, (\varepsilon_1, \dots, \varepsilon_n)$ orthonormale tq $\forall i$ $\varepsilon_i \in \mathrm{Vect}(u_1, \dots, u_i)$

G.S Matricielle. $A \in GL_n(\mathbb{R})$ $\quad \exists!\, (\Omega, T) \in O_n(\mathbb{R}) \times T_n^{++}(\mathbb{R})$

$$A = \Omega T$$

($A = T\Omega$ works as well).

G.S Tjs vrai pour une famille ∞ Dim