

# LIAISONS NORMALISÉES

Formulaire


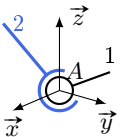
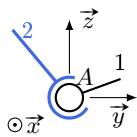

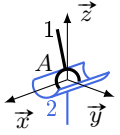
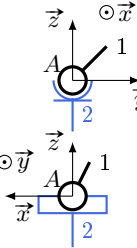
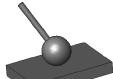
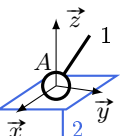
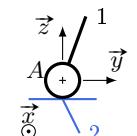

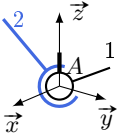
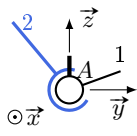

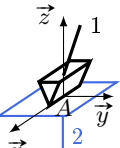
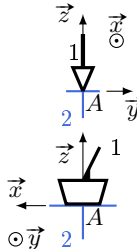
CPGE

À savoir par cœur !

v2.21

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Nom + Caractéristique	Schéma spatial (3D)	Schéma(s) plan(s) (2D)	Mobilités	$\{\mathcal{V}_{2/1}\}$	$\{\mathcal{T}_{2 \rightarrow 1}\}$
<b>Encastrement</b>			$\begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_C \\ \forall C \end{matrix}$	$\begin{matrix} \begin{Bmatrix} X_{21} & L_{21} \\ Y_{21} & M_{21} \\ Z_{21} & N_{21} \end{Bmatrix}_C \\ \forall C \end{matrix}$
<b>Glissière</b> Direction $\vec{x}$			$\begin{bmatrix} 0 & T_x \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} 0 & V_{M,2/1}^x \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_M \\ \forall M \end{matrix}$	$\begin{matrix} \begin{Bmatrix} 0 & L_{21} \\ Y_{21} & M_{21} \\ Z_{21} & N_{21} \end{Bmatrix}_M \\ \forall M \end{matrix}$
<b>Pivot</b> Axe (A, $\vec{x}$ )			$\begin{bmatrix} R_x & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} \omega_{2/1}^x & 0 \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_A \\ \forall M \in (A, \vec{x}) \end{matrix}$	$\begin{matrix} \begin{Bmatrix} X_{21} & 0 \\ Y_{21} & M_{21} \\ Z_{21} & N_{21} \end{Bmatrix}_A \\ \forall A \end{matrix}$
<b>Hélicoïdale</b> Axe (A, $\vec{x}$ )			$\begin{bmatrix} R_x & T_x \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} \omega_{2/1}^x & \frac{p}{2\pi}\omega_{2/1}^x \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_C \\ \forall M \in (A, \vec{x}) \end{matrix}$	$\begin{matrix} \begin{Bmatrix} X_{21} & -\frac{p}{2\pi}X_{21} \\ Y_{21} & M_{21} \\ Z_{21} & N_{21} \end{Bmatrix}_C \\ \text{Pas à gauche :} \\ -\frac{p}{2\pi}\omega_{2/1}^x \text{ et } \frac{p}{2\pi}X_{21} \end{matrix}$
<b>Pivot glissant</b> Axe (A, $\vec{x}$ )			$\begin{bmatrix} R_x & T_x \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} \omega_{2/1}^x & V_{A,2/1}^x \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_A \\ \forall M \in (A, \vec{x}) \end{matrix}$	$\begin{matrix} \begin{Bmatrix} 0 & 0 \\ Y_{21} & M_{21} \\ Z_{21} & N_{21} \end{Bmatrix}_A \\ \forall A \end{matrix}$
<b>Appui plan</b> Normale au plan $\vec{z}$			$\begin{bmatrix} 0 & T_x \\ 0 & T_y \\ R_z & 0 \end{bmatrix}$	$\begin{matrix} \begin{Bmatrix} 0 & V_{M,2/1}^x \\ 0 & V_{M,2/1}^y \\ \omega_{2/1}^z & 0 \end{Bmatrix}_M \\ \forall M \end{matrix}$	$\begin{matrix} \begin{Bmatrix} 0 & L_{21} \\ 0 & M_{21} \\ Z_{21} & 0 \end{Bmatrix}_M \\ \forall M \end{matrix}$

Nom + Caractéristique	Schéma spatial (3D)	Schéma(s) plan(s) (2D)	Mobilités	$\{\mathcal{V}_{2/1}\}$	$\{\mathcal{T}_{2 \rightarrow 1}\}$
<b>Sphérique</b>  Centre de la sphère A			$\begin{bmatrix} R_x & 0 \\ R_y & 0 \\ R_z & 0 \end{bmatrix}$	$_A \left\{ \begin{matrix} \omega_{2/1}^x & 0 \\ \omega_{2/1}^y & 0 \\ \omega_{2/1}^z & 0 \end{matrix} \right\}_b$	$_A \left\{ \begin{matrix} X_{21} & 0 \\ Y_{21} & 0 \\ Z_{21} & 0 \end{matrix} \right\}_b$
En A					
<b>Sphère cylindre</b>  Centre de la sphère A Direction $\vec{x}$			$\begin{bmatrix} R_x & T_x \\ R_y & 0 \\ R_z & 0 \end{bmatrix}$	$_A \left\{ \begin{matrix} \omega_{2/1}^x & V_{A,2/1}^x \\ \omega_{2/1}^y & 0 \\ \omega_{2/1}^z & 0 \end{matrix} \right\}_b$	$_A \left\{ \begin{matrix} 0 & 0 \\ Y_{21} & 0 \\ Z_{21} & 0 \end{matrix} \right\}_b$
En A					
<b>Sphère plan</b>  Point de contact A Normale au plan $\vec{z}$			$\begin{bmatrix} R_x & T_x \\ R_y & T_y \\ R_z & 0 \end{bmatrix}$	$_A \left\{ \begin{matrix} \omega_{2/1}^x & V_{A,2/1}^x \\ \omega_{2/1}^y & V_{A,2/1}^y \\ \omega_{2/1}^z & 0 \end{matrix} \right\}_b$	$_A \left\{ \begin{matrix} 0 & 0 \\ 0 & 0 \\ Z_{21} & 0 \end{matrix} \right\}_b$
$\forall M \in (A, \vec{z})$					
<b>Sphérique à doigt</b>  Centre de la sphère A Normale au plan $\vec{x}$ Direction du doigt $\vec{z}$			$\begin{bmatrix} R_x & 0 \\ 0 & 0 \\ R_z & 0 \end{bmatrix}$	$_A \left\{ \begin{matrix} \omega_{2/1}^x & 0 \\ 0 & 0 \\ \omega_{2/1}^z & 0 \end{matrix} \right\}_b$	$_A \left\{ \begin{matrix} X_{21} & 0 \\ Y_{21} & M_{21} \\ Z_{21} & 0 \end{matrix} \right\}_b$
En A					
<b>Linéaire rectiligne (ou cylindre plan)</b>  Droite de contact (A, $\vec{x}$ ) Normale au plan $\vec{z}$			$\begin{bmatrix} R_x & T_x \\ 0 & T_y \\ R_z & 0 \end{bmatrix}$	$_A \left\{ \begin{matrix} \omega_{2/1}^x & V_{A,2/1}^x \\ 0 & V_{A,2/1}^y \\ \omega_{2/1}^z & 0 \end{matrix} \right\}_b$	$_A \left\{ \begin{matrix} 0 & 0 \\ 0 & M_{21} \\ Z_{21} & 0 \end{matrix} \right\}_b$
$\forall M \in \text{plan}(A, \vec{x}, \vec{z})$					