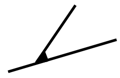
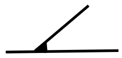
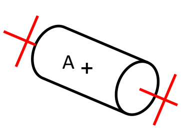
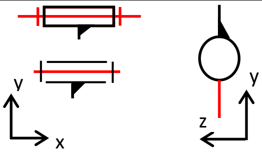
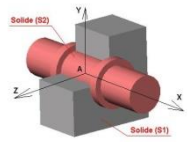
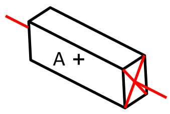
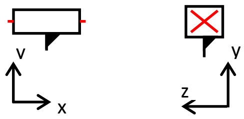
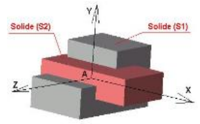
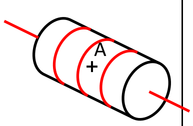
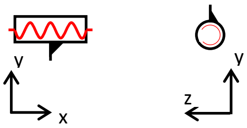
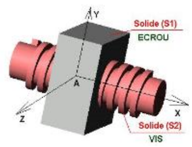
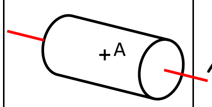
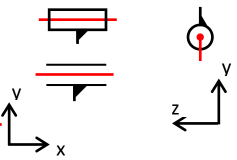
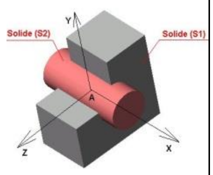
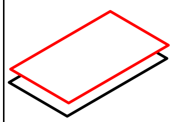
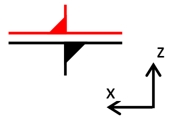
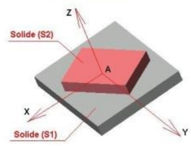
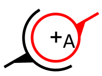
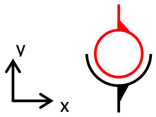
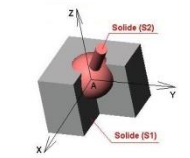
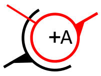
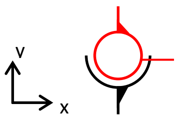
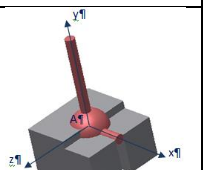
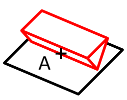
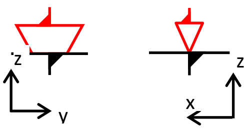
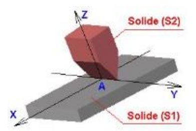
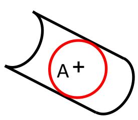
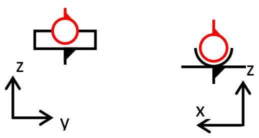
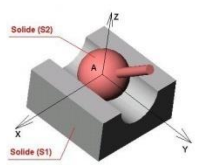
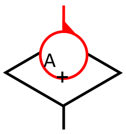
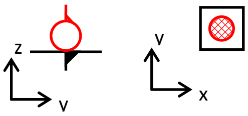
Tableau des liaisons normalisées

Liaison	Schématisation	Schématisation plane	Torseur statique associé	Torseur cinématique associé	Exemple
Encastrement (ou fixe) $\boxed{\forall P}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} X & L_P \\ Y & M_P \\ Z & N_P \end{Bmatrix}_{(\vec{x},\vec{y},\vec{z})}$ **Ns=6**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_{(\vec{x},\vec{y},\vec{z})}$ **Nc=0**	
Pivot d'axe $(A,\vec{x})$ $\boxed{\forall P \in (A,\vec{x})}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} X & 0 \\ Y & M_P \\ Z & N_P \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Ns=5**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} \omega_x & 0 \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Nc=1**	
Glissière de direction $(\vec{x})$ $\boxed{\forall P}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} 0 & L_P \\ Y & M_P \\ Z & N_P \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Ns=5**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} 0 & V_{Px} \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Nc=1**	
***Hélicoïdale* d'axe** $(A,\vec{x})$ $\boxed{\forall P \in (A,\vec{x})}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} X & L_P \\ Y & M_P \\ Z & N_P \end{Bmatrix}_{(\vec{x},\_,\_)}$ $L = -p.\frac{X}{2\pi}$ pour filet à droite **Ns=5**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} \omega_x & V_{Px} \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_{(\vec{x},\_,\_)}$ $V_{Ax} = p.\frac{\omega_x}{2\pi}$ pour filet à droite **Nc=1**	
Pivot glissant *d'axe* $(A,\vec{x})$ $\boxed{\forall P \in (A,\vec{x})}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} 0 & 0 \\ Y & M_P \\ Z & N_P \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Ns=4**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} w_x & V_{Px} \\ 0 & 0 \\ 0 & 0 \end{Bmatrix}_{(\vec{x},\_,\_)}$ **Nc=2**	
***Appui plan* de normale** $(\vec{z})$ $\boxed{\forall P}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} 0 & L_P \\ 0 & M_P \\ Z & 0 \end{Bmatrix}_{(\_,\_,\vec{z})}$ **Ns=3**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} 0 & V_{Px} \\ 0 & V_{Py} \\ \omega_z & 0 \end{Bmatrix}_{(\_,\_,\vec{z})}$ **Nc=3**	
Sphérique (rotule) de centre A $\boxed{\text{Au point A}}$			$\{T_{S_2\to S_1}\}_A = {}_A\begin{Bmatrix} X & 0 \\ Y & 0 \\ Z & 0 \end{Bmatrix}_{(\_,\_,\_)}$ **Ns=3**	$\{V_{S_2/S_1}\}_A = {}_A\begin{Bmatrix} \omega_x & 0 \\ \omega_y & 0 \\ \omega_z & 0 \end{Bmatrix}_{(\_,\_,\_)}$ **Nc=3**	
Sphérique à doigt de centre A bloquée en $(\vec{y})$ $\boxed{\text{Au point A}}$			$\{T_{S_2\to S_1}\}_A = {}_A\begin{Bmatrix} X & 0 \\ Y & M_A \\ Z & 0 \end{Bmatrix}_{(\_,\vec{y},\_)}$ **Ns=4**	$\{V_{S_2/S_1}\}_A = {}_A\begin{Bmatrix} \omega_x & 0 \\ 0 & 0 \\ \omega_z & 0 \end{Bmatrix}_{(\_,\vec{y},\_)}$ **Nc=2**	
Linéaire rectiligne /Cylindre plan de normale $(\vec{z})$ et d'axe $(A,\vec{y})$ $\boxed{\forall P \in (A,\vec{y},\vec{z})}$			$\{T_{S_2\to S_1}\}_P = {}_P\begin{Bmatrix} 0 & L_P \\ 0 & 0 \\ Z & 0 \end{Bmatrix}_{(\vec{x},\vec{y},\vec{z})}$ **Ns=2**	$\{V_{S_2/S_1}\}_P = {}_P\begin{Bmatrix} 0 & V_{Px} \\ \omega_y & V_{Py} \\ \omega_z & 0 \end{Bmatrix}_{(\vec{x},\vec{y},\vec{z})}$ **Nc=4**	
Sphère-cylindre (linéaire annulaire) d'axe $(A,\vec{y})$ $\boxed{\text{Au point A}}$			$\{T_{S_2\to S_1}\}_A = {}_A\begin{Bmatrix} X & 0 \\ 0 & 0 \\ Z & 0 \end{Bmatrix}_{(\_,\vec{y},\_)}$ **Ns=2**	$\{V_{S_2/S_1}\}_A = {}_A\begin{Bmatrix} \omega_x & 0 \\ \omega_y & V_y \\ \omega_z & 0 \end{Bmatrix}_{(\_,\vec{y},\_)}$ **Nc=4**	
Sphère-plan (ponctuelle) de normale $(\vec{z})$ $\boxed{\forall P \in (A,\vec{z})}$			$\{T_{S_2\to S_1}\}_A = {}_A\begin{Bmatrix} 0 & 0 \\ 0 & 0 \\ Z & 0 \end{Bmatrix}_{(\_,\vec{y},\_)}$ **Ns=1**	$\{V_{S_2/S_1}\}_A = {}_A\begin{Bmatrix} \omega_x & V_{Ax} \\ \omega_y & V_{Ay} \\ \omega_z & 0 \end{Bmatrix}_{(\vec{x},\vec{y},\vec{z})}$ **Nc=5**