Modélisation des chaînes de solides dans le but de déterminer les contraintes géométriques dans les mécanismes

Chapitre 2 – Hyperstatisme

QCM

Mécanisme bielle – manivelle (ou pas...)

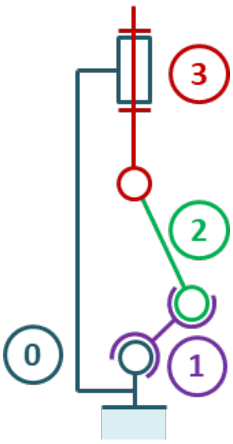
Savoirs et compétences :

- *Mod2.C34 : degré de mobilité du modèle;*
- *Mod2.C34 : degré d'hyperstatisme du modèle;*
- *Mod2.C34 : résoudre le système associé à la fermeture cinématique et en déduire le degré de mobilité et d'hyperstatisme.*

Hyperstatisme

Question *Pour chacun des mécanismes suivants, déterminer :*

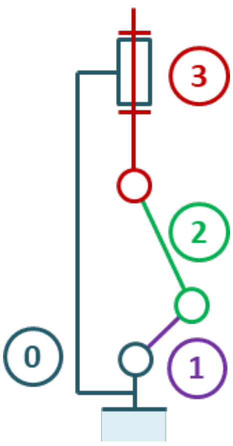
- *la mobilité dans l'hypothèse d'un problème 3D;*
- *l'hyperstatisme dans l'hypothèse d'un problème 3D;*
- *l'hyperstatisme dans l'hypothèse d'un problème 2D.*



m_{3D} :

h_{3D} :

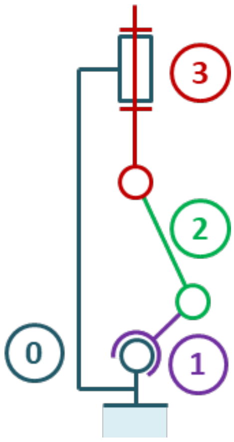
h_{2D} :



m_{3D} :

h_{3D} :

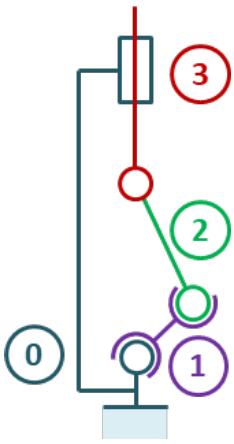
h_{2D} :



m_{3D} :

h_{3D} :

h_{2D} :



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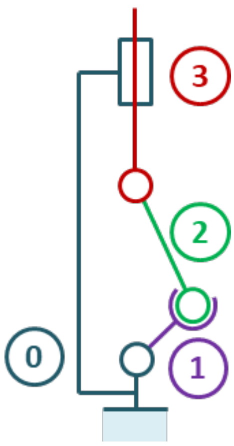
h_{3D} :

h_{2D} :



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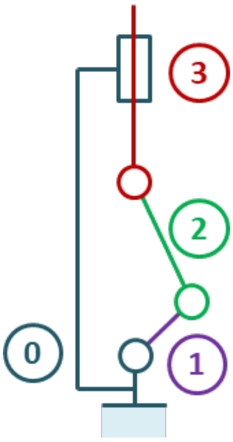
h_{3D} :

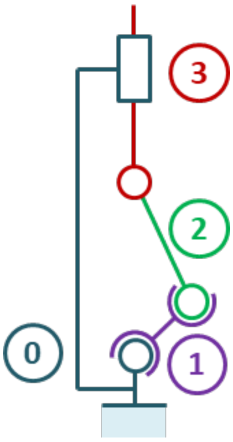
h_{2D} :



m_{3D} :

h_{3D} :

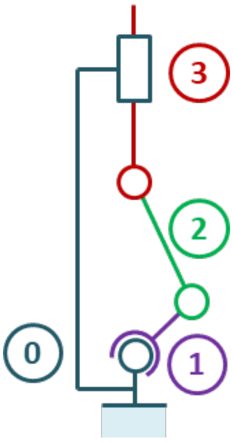
h_{2D} :



m_{3D} :

h_{3D} :

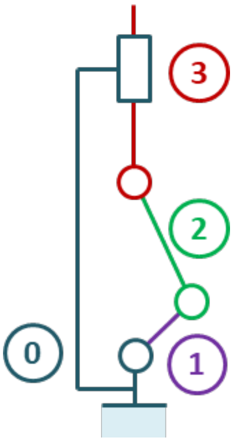
h_{2D} :



m_{3D} :

h_{3D} :

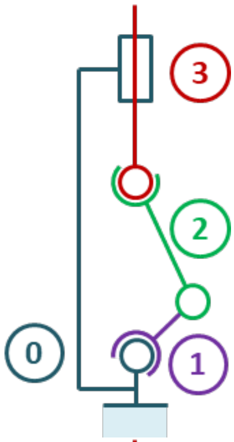
h_{2D} :



m_{3D} :

h_{3D} :

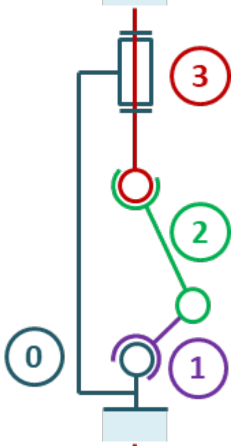
h_{2D} :



m_{3D} :

h_{3D} :

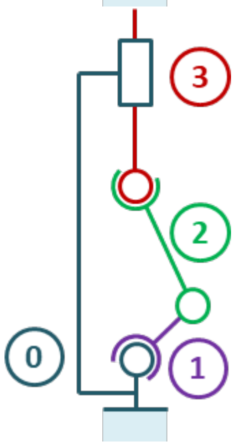
h_{2D} :



m_{3D} :

h_{3D} :

h_{2D} :



m_{3D} :

h_{3D} :

h_{2D} :

1. $m_{3D} = 2$, $h_{3D} = 0$, $h_{2D} = 0$.
2. $m_{3D} = 0$, $h_{3D} = 2$, $h_{2D} = 0$.
3. $m_{3D} = 1$, $h_{3D} = 1$, $h_{2D} = 0$.
4. $m_{3D} = 3$, $h_{3D} = 0$, $h_{2D} = 0$.
5. $m_{3D} = 1$, $h_{3D} = 0$, $h_{2D} = 0$.
6. $m_{3D} = 1$, $h_{3D} = 2$, $h_{2D} = 0$.
7. $m_{3D} = 2$, $h_{3D} = 0$, $h_{2D} = 0$.
8. $m_{3D} = 1$, $h_{3D} = 1$, $h_{2D} = 0$.
9. $m_{3D} = 1$, $h_{3D} = 3$, $h_{2D} = 0$.
10. $m_{3D} = 3$, $h_{3D} = 0$, $h_{2D} = 0$.
11. $m_{3D} = 2$, $h_{3D} = 0$, $h_{2D} = 0$.
12. $m_{3D} = 2$, $h_{3D} = 0$, $h_{2D} = 0$.