La molécule organique en 3D

Rappels : géométrie autour de l'atome de carbone

C Z=6 $1s^2$ $2s^2 2p^2$

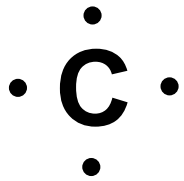
$1s^2$ $2s^2$ $2p^2$

Configuration électronique dans l'état fondamental

$1s^2$ $2s^1$ $2p^3$

Configuration électronique dans l'état excité

4 électrons célibataires pouvant permettre de former 4 liaisons :
Carbone tétravalent

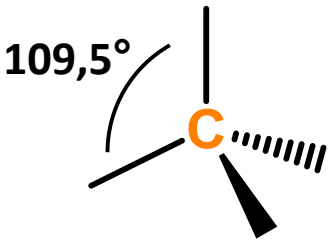


La molécule organique en 3D

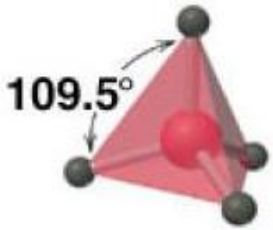
Rappels : géométrie autour de l'atome de carbone

L'atome de CARBONE

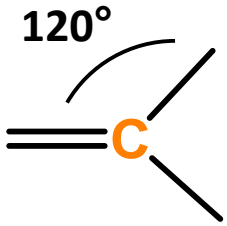
4 voisins



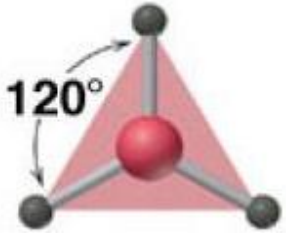
Tétraèdre



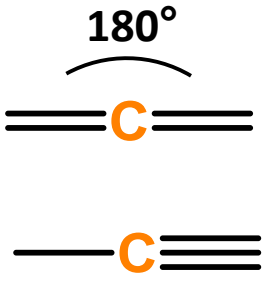
3 voisins



Triangle plan



2 voisins



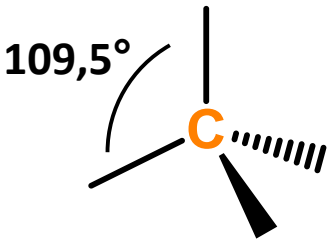
Linéaire

La molécule organique en 3D

Rappels : géométrie autour de l'atome de carbone

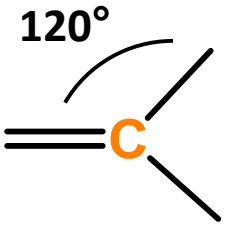
L'atome de CARBONE

4 voisins



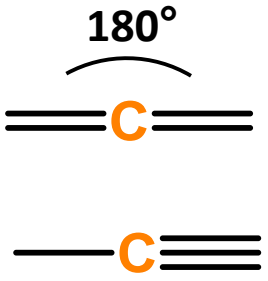
Carbone sp^3

3 voisins



Carbone sp^2

2 voisins



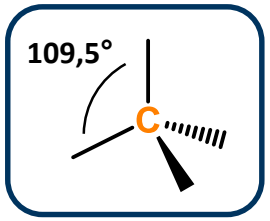
Carbone sp

Pourquoi ??

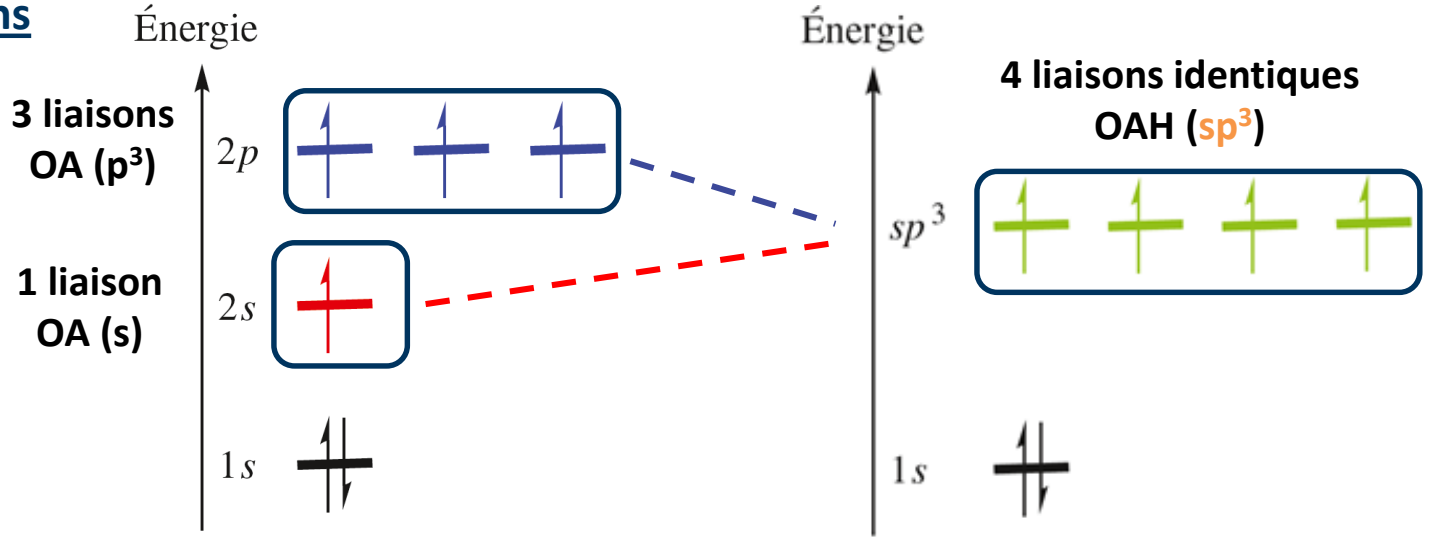
La molécule organique en 3D

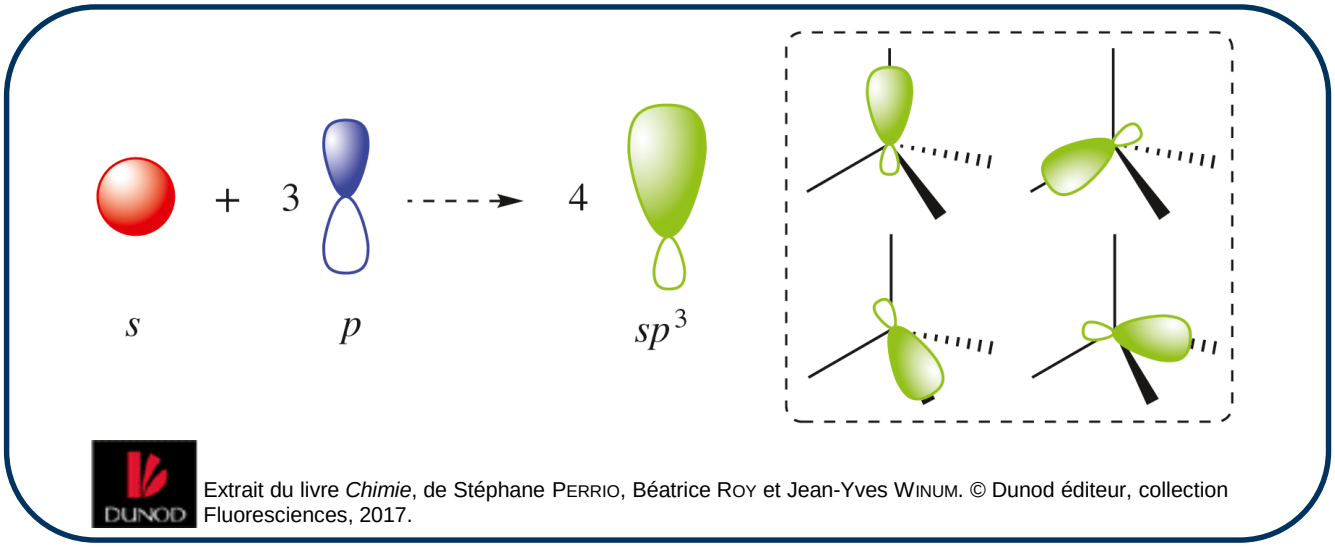
Rappels : géométrie autour de l'atome de carbone

Carbone à 4 voisins



Carbone sp^3

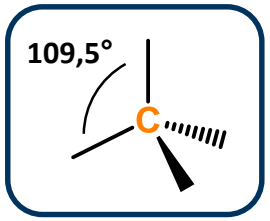




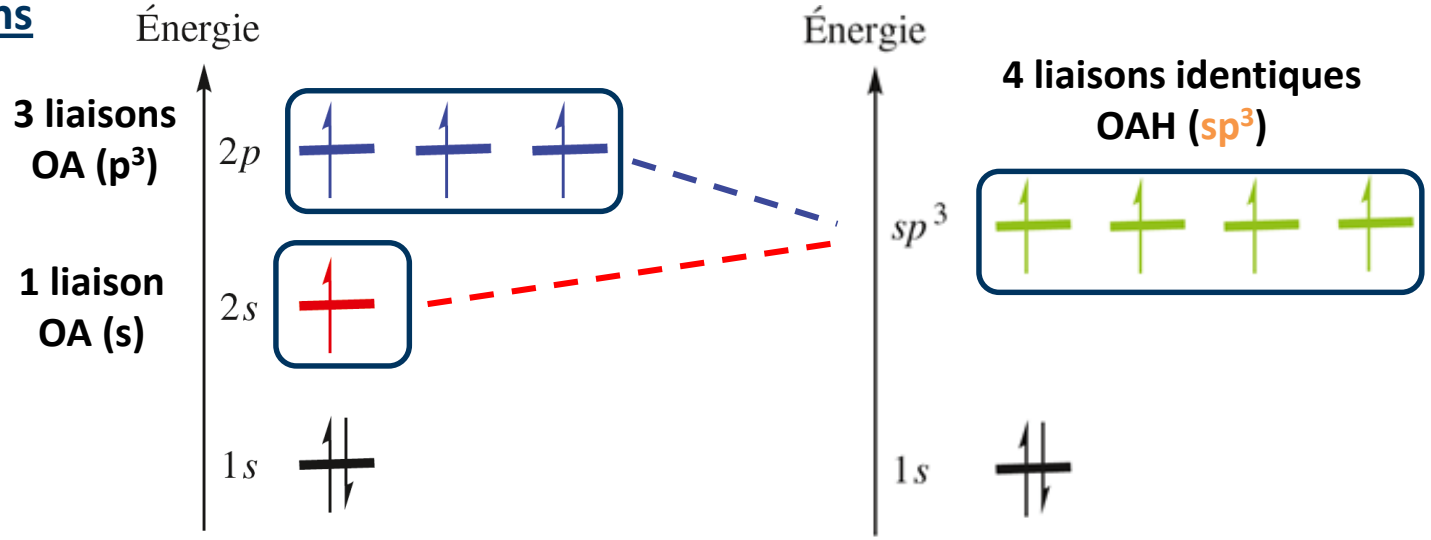
La molécule organique en 3D

Rappels : géométrie autour de l'atome de carbone

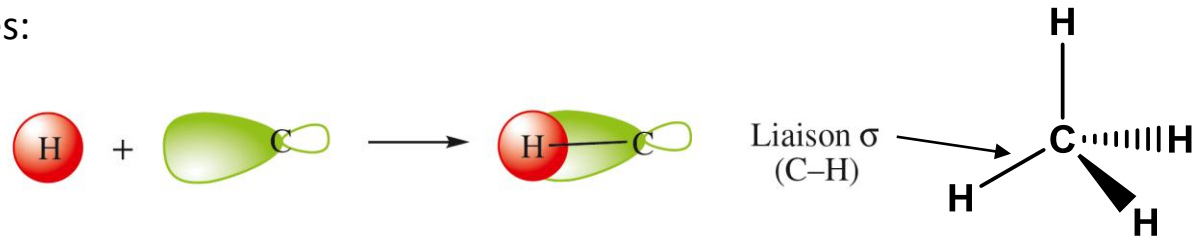
Carbone à 4 voisins



Carbone sp^3



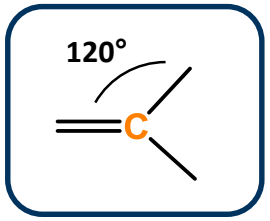
Exemples:



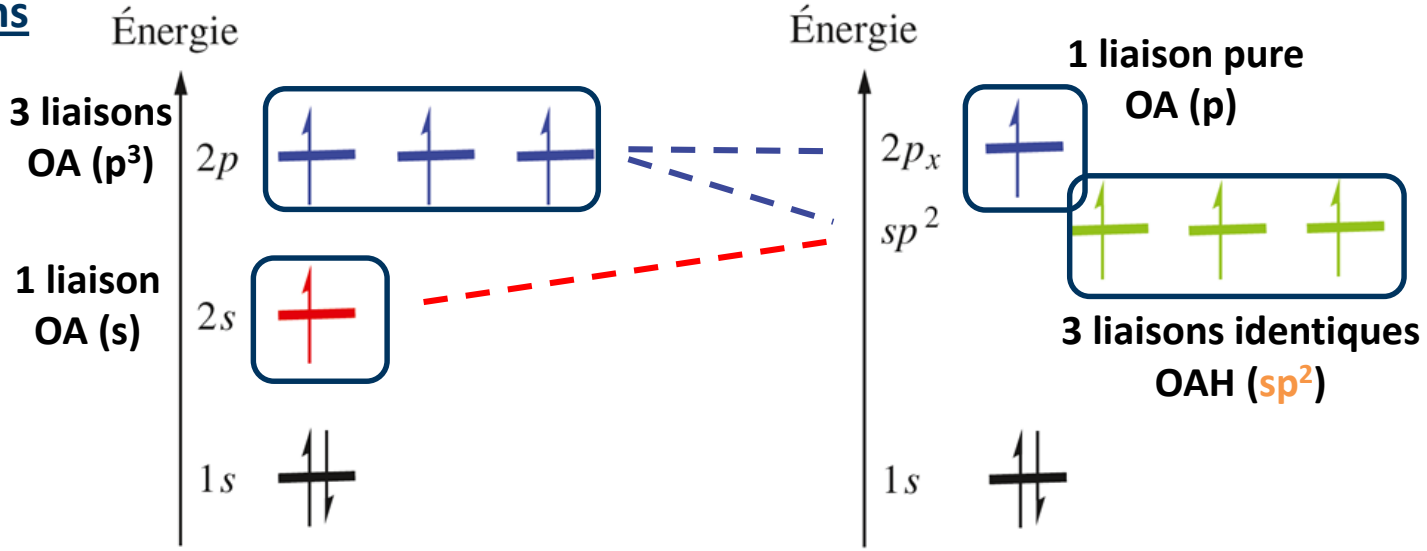
La molécule organique en 3D

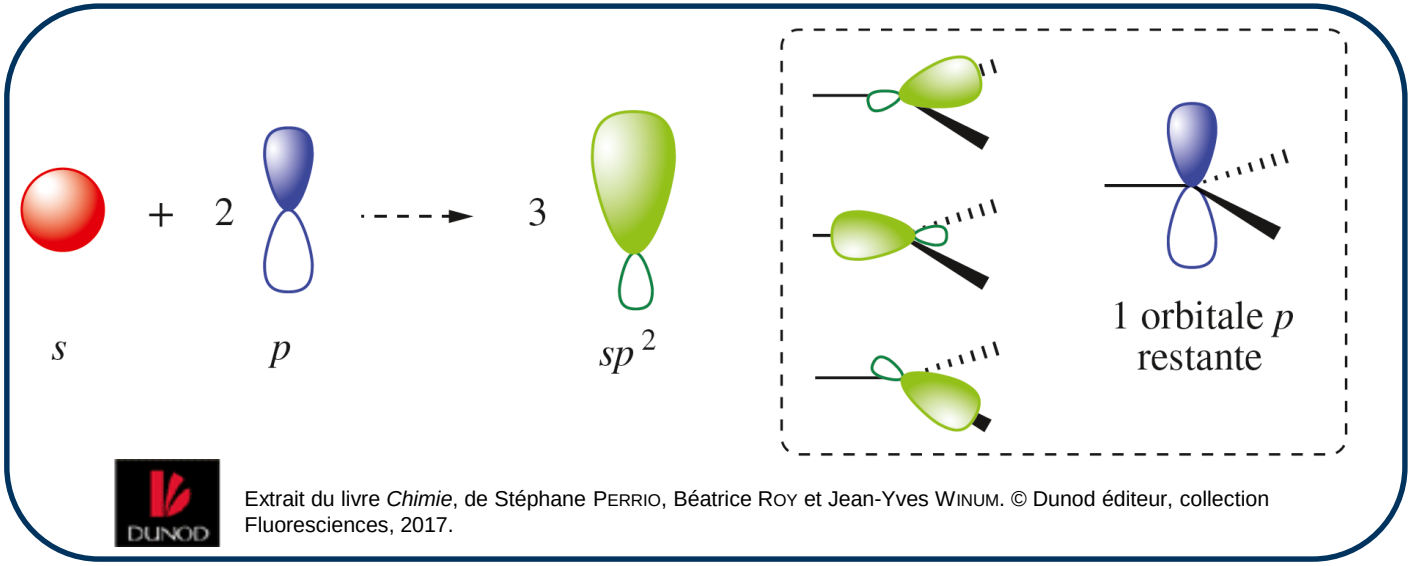
Rappels : géométrie autour de l'atome de carbone

Carbone à 3 voisins



Carbone sp^2





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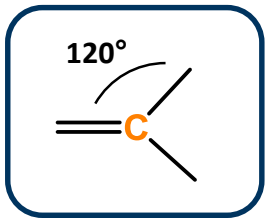
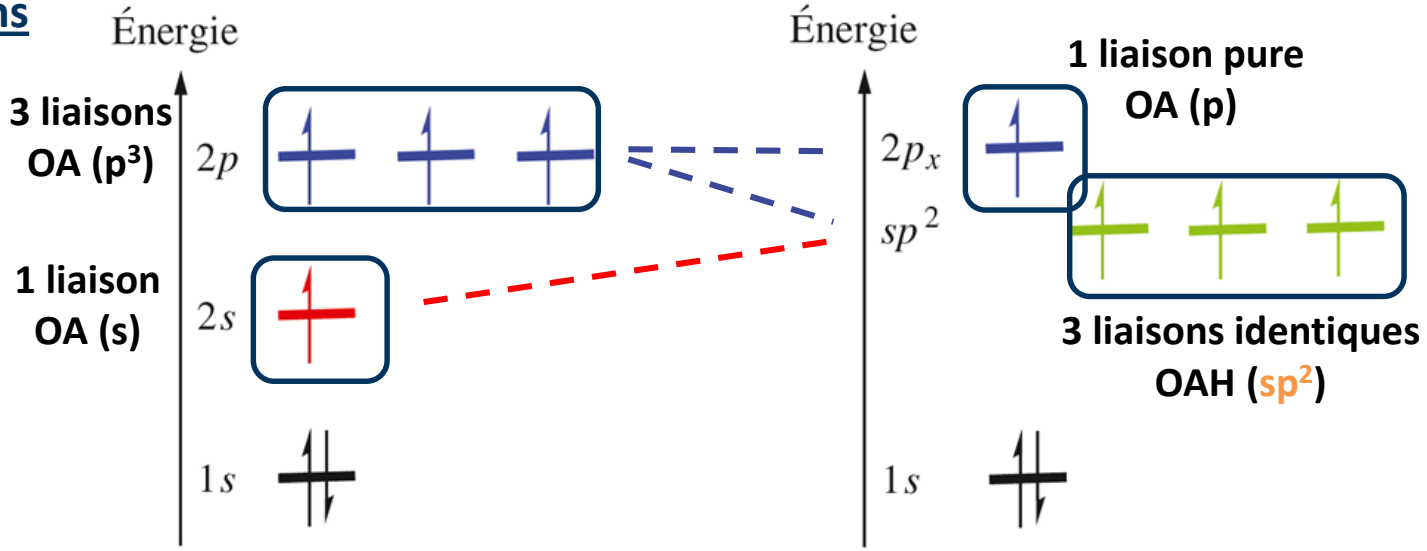
La molécule organique en 3D

Rappels : géométrie autour de l'atome de carbone

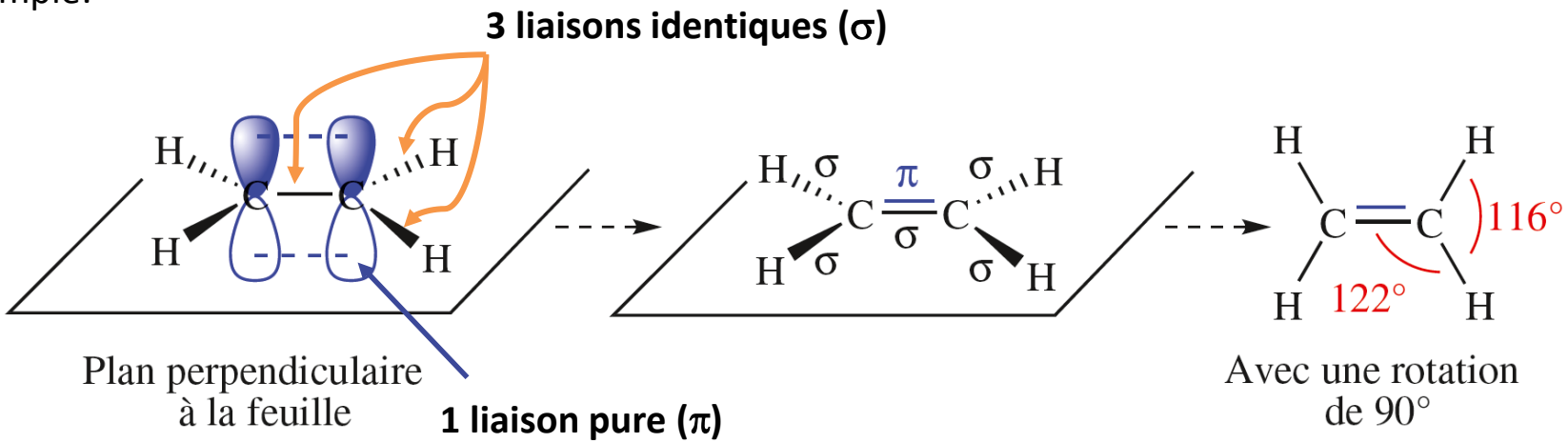
Carbone à 3 voisins



Carbone sp^2



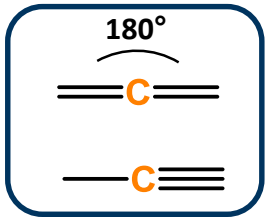
Exemple:



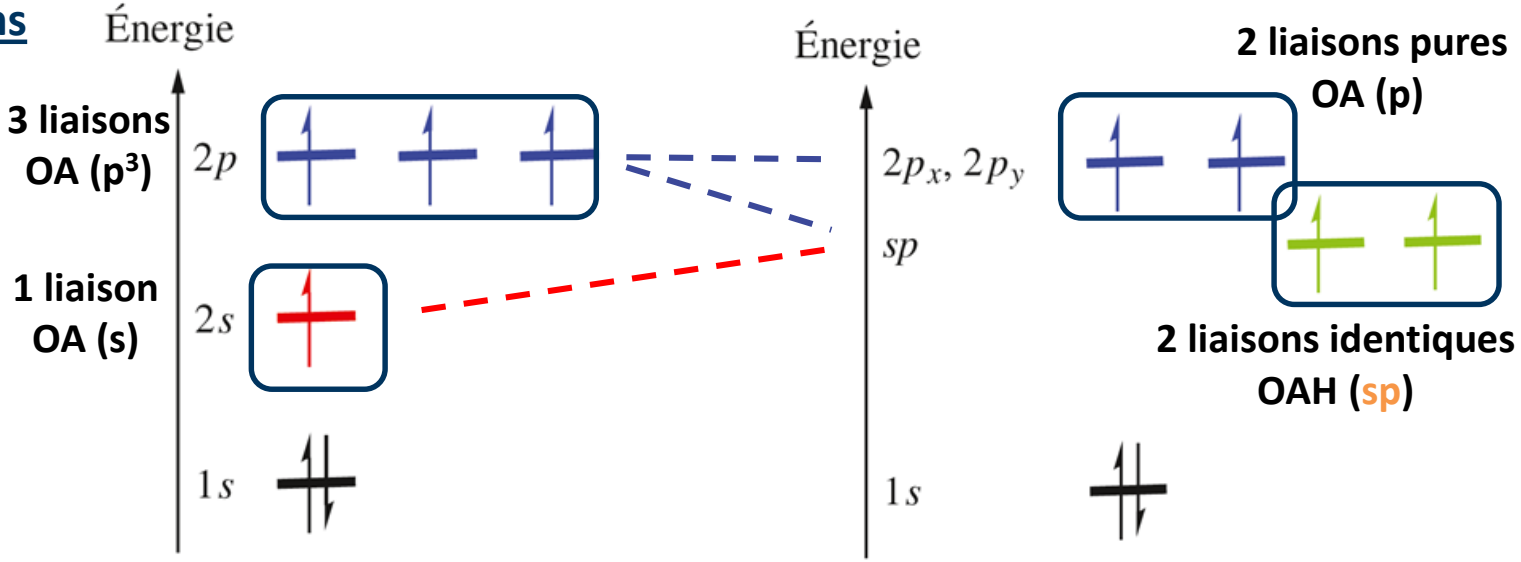
La molécule organique en 3D

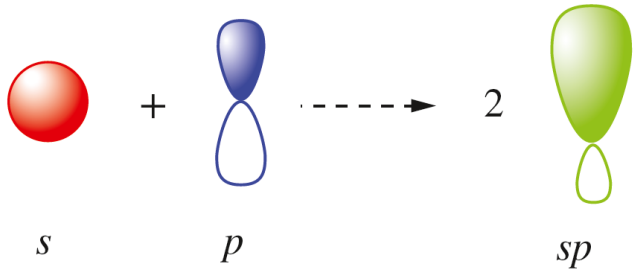
Rappels : géométrie autour de l'atome de carbone

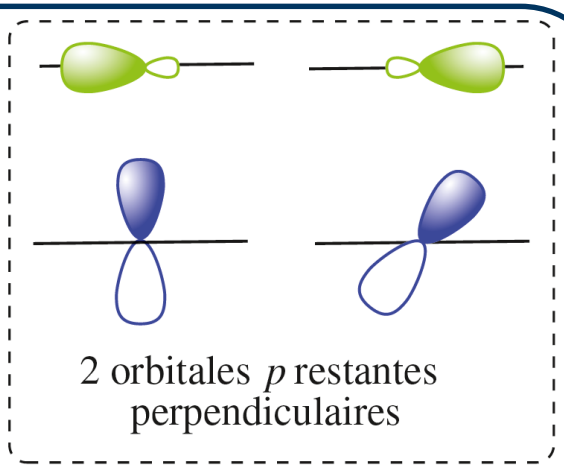
Carbone à 2 voisins



Carbone sp



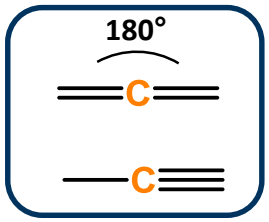




La molécule organique en 3D

Rappels : géométrie autour de l'atome de carbone

Carbone à 2 voisins



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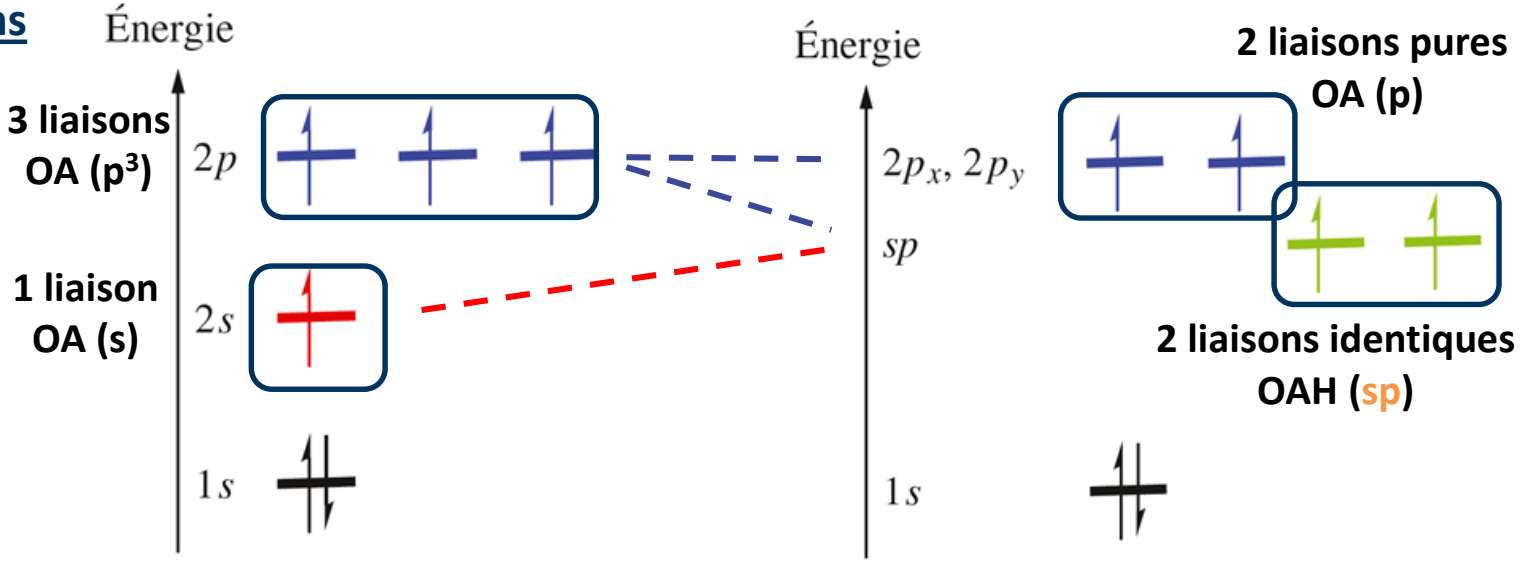
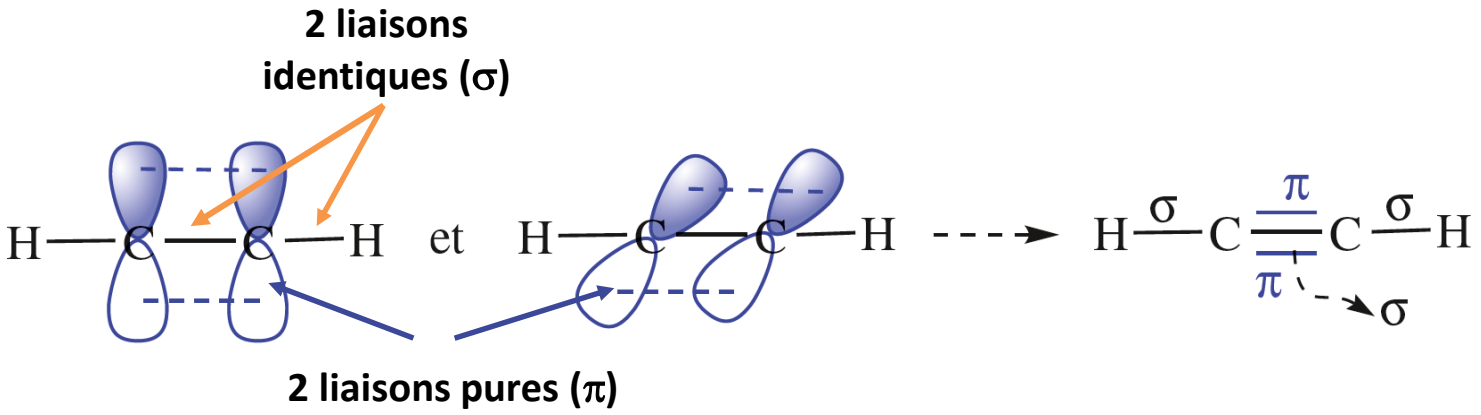


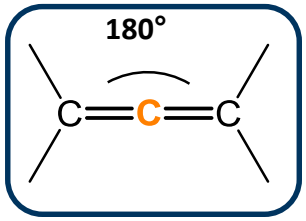
Exemple:



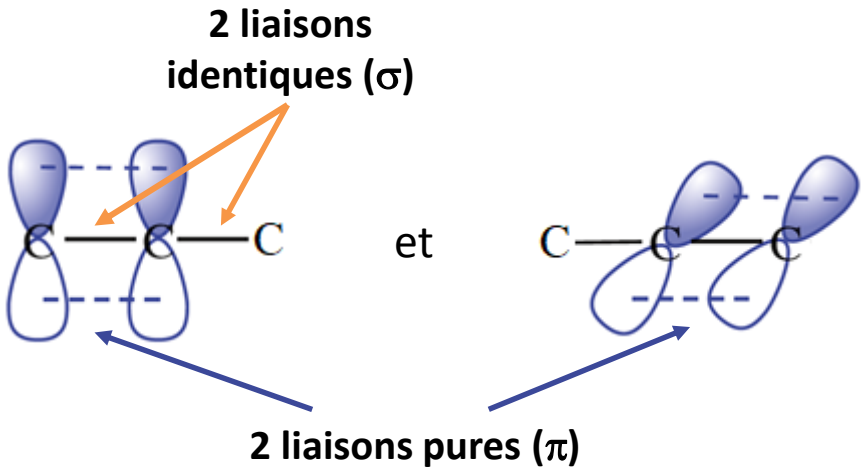
La molécule organique en 3D

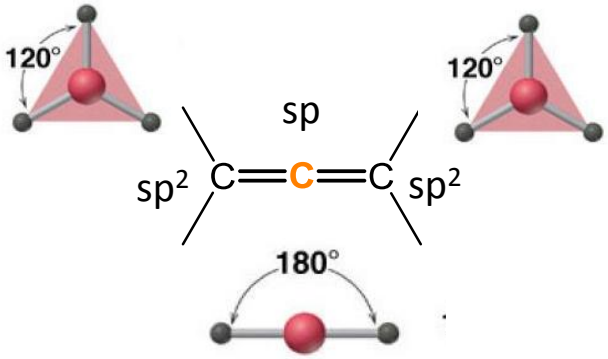
Rappels : géométrie autour de l'atome de carbone

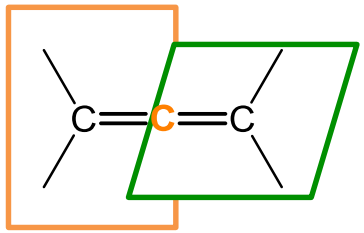
Carbone à 2 voisins : les allènes

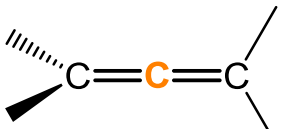


Carbone sp









2 parties planes (géométrie sp^2) perpendiculaires