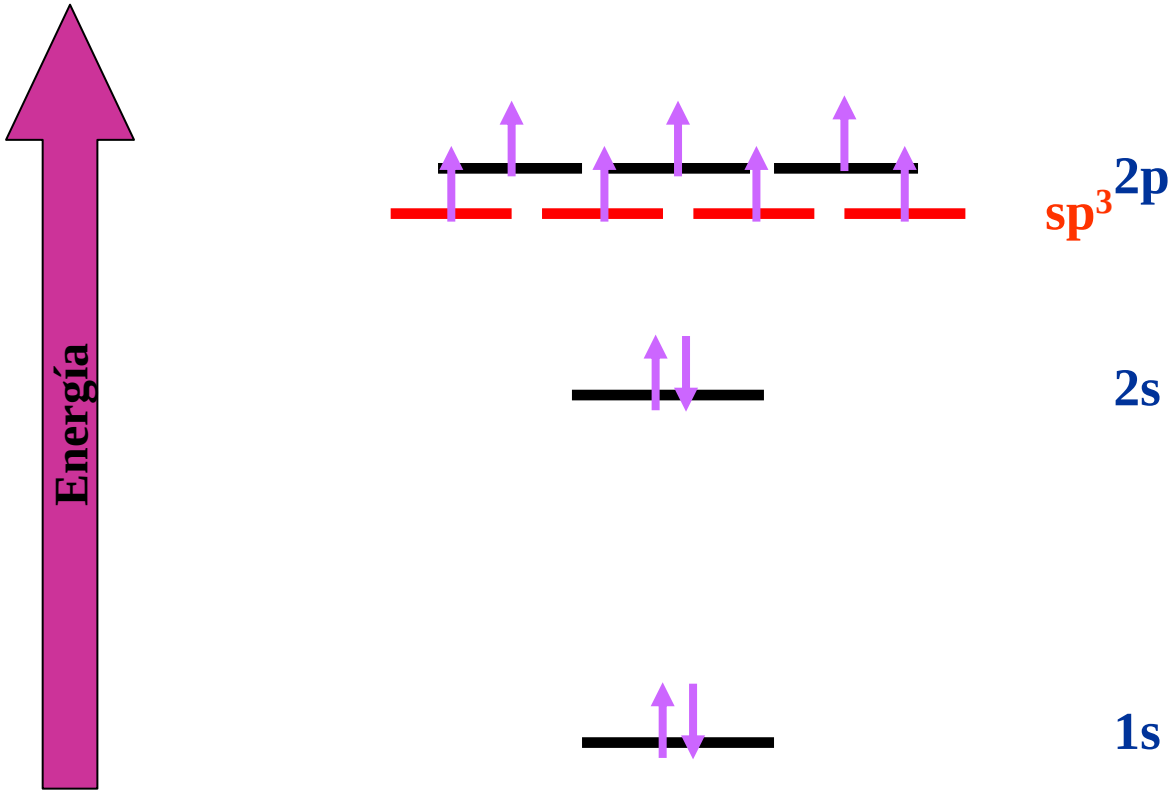
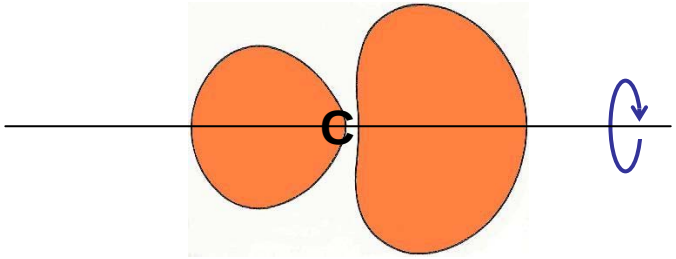
Hibridación de OA

Hibridación ***sp³*** *y las estructuras de* ***metano y etano.***

C $1s^2\ 2s^2 2p^1 2p^1$ —Energía→ C $1s^2\ 2s^1 2p^1 2p^1 2p^1$





Orbital híbrido sp^3

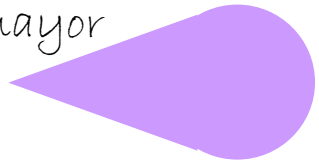
2 lóbulos

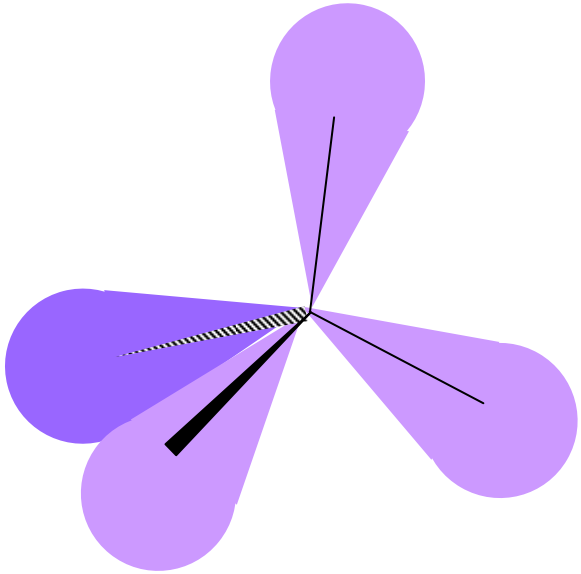
Direccional

Simetría de revolución

Disposición tetraédrica de los cuatro ejes.

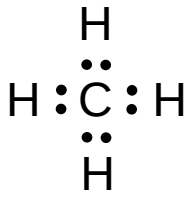
aunque para simplificar el dibujo, representaremos sólo el lóbulo mayor y de manera estilizada.

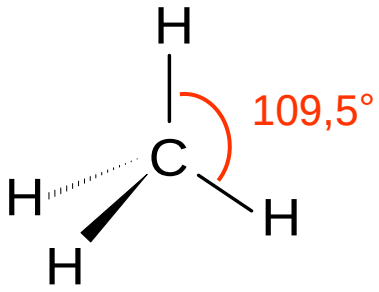


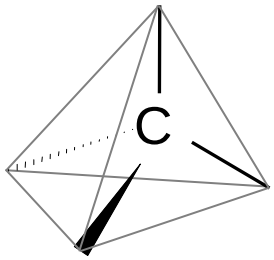


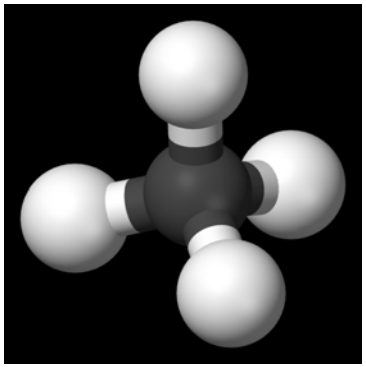
Disposición espacial de los 4 orbitales híbridos del C tetraédrico

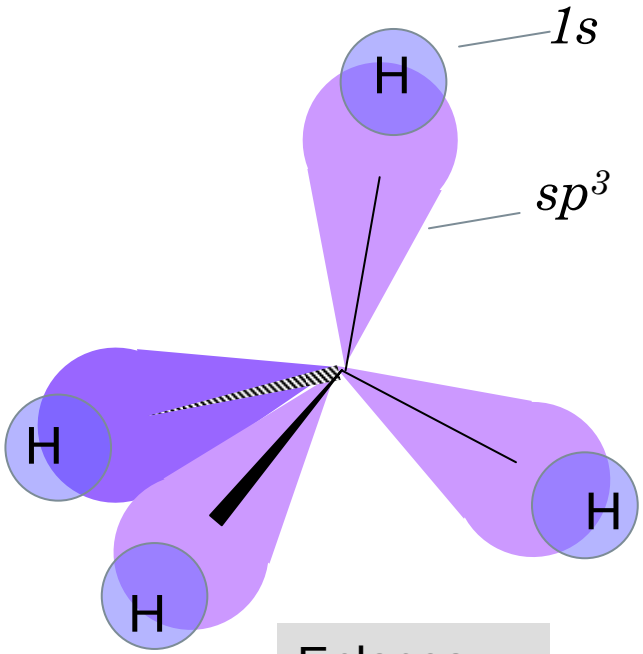
Metano



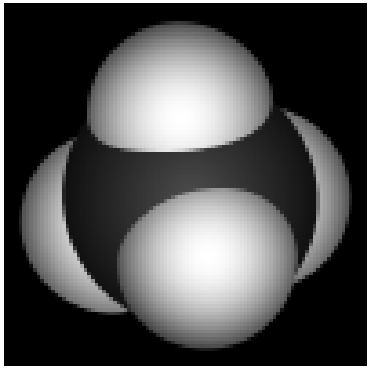








Enlaces σ

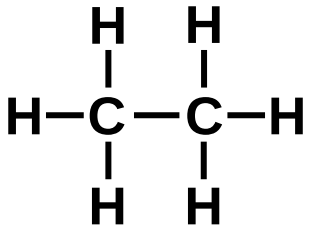


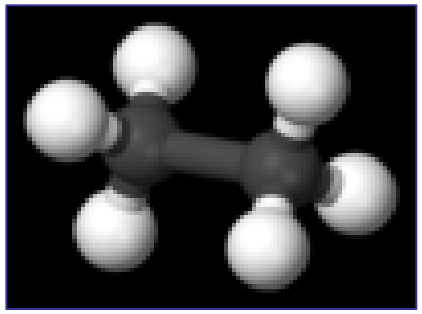
Enlace σ (sigma)

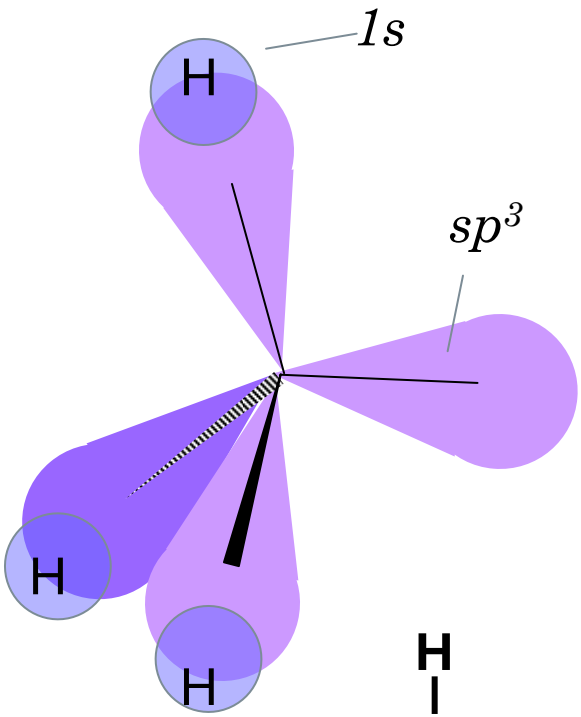
Enlace entre dos átomos en que la distribución de densidad electrónica tiene simetría rotacional alrededor de la línea que une los núcleos de los átomos enlazados.

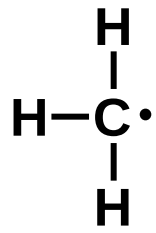
La mayor densidad electrónica se encuentra entre los dos núcleos.

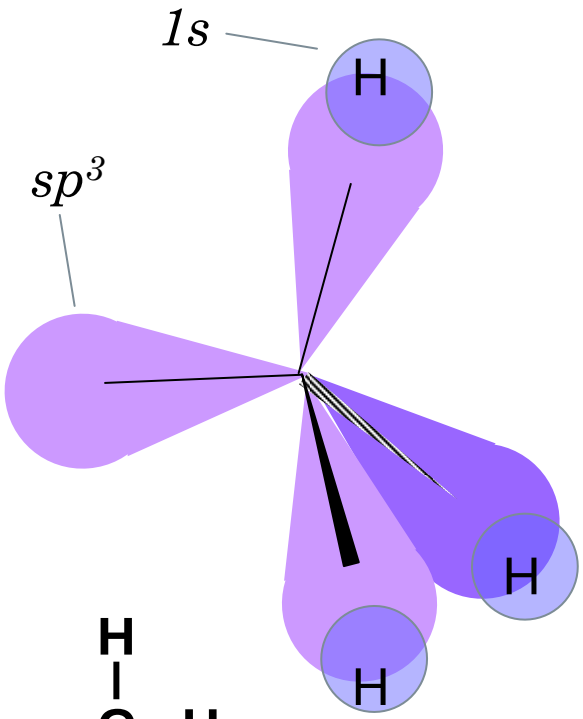
Etano

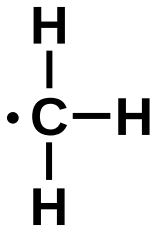




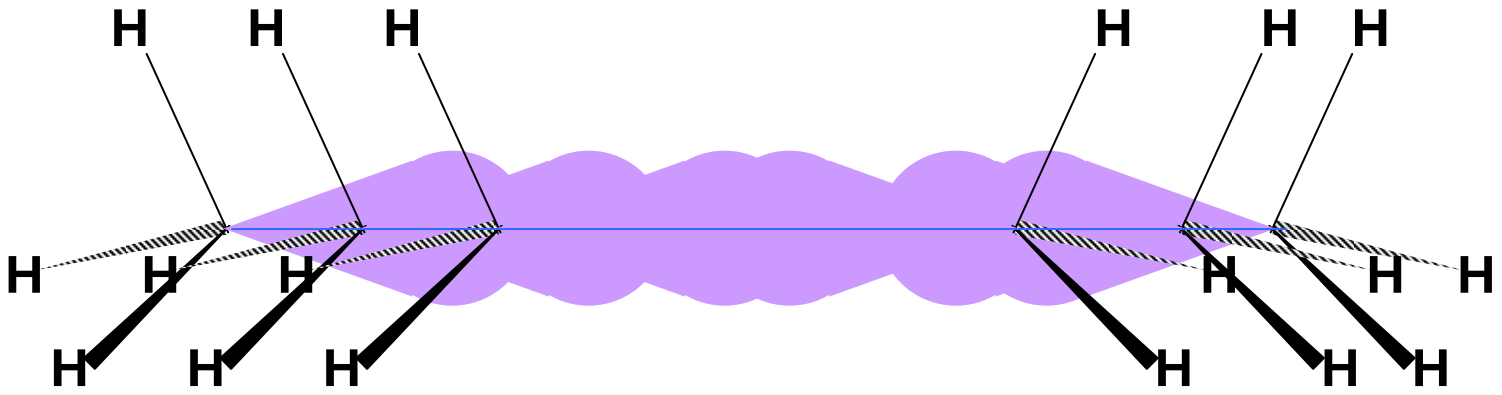








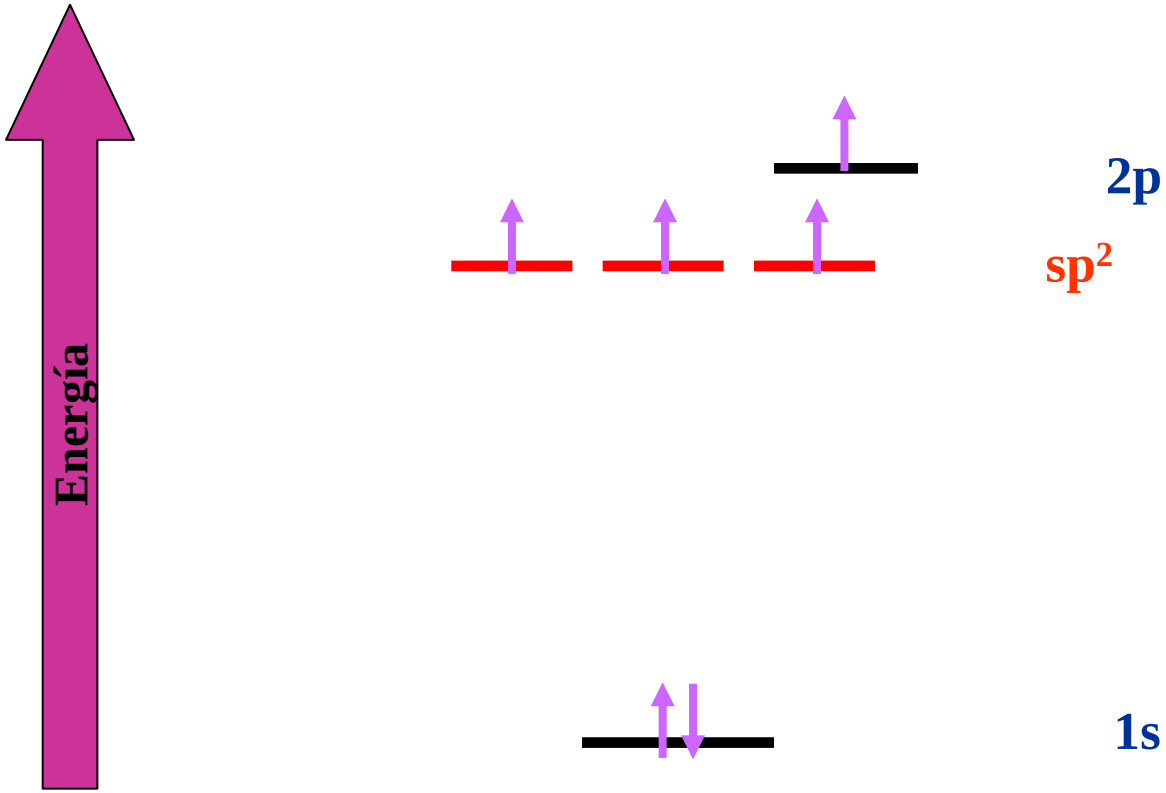
Etano



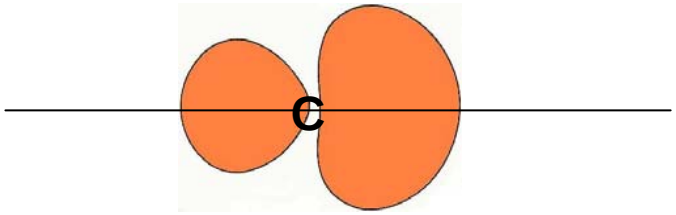
Hibridación de OA

Hibridación ***sp²*** *y la estructura de* ***eteno.***

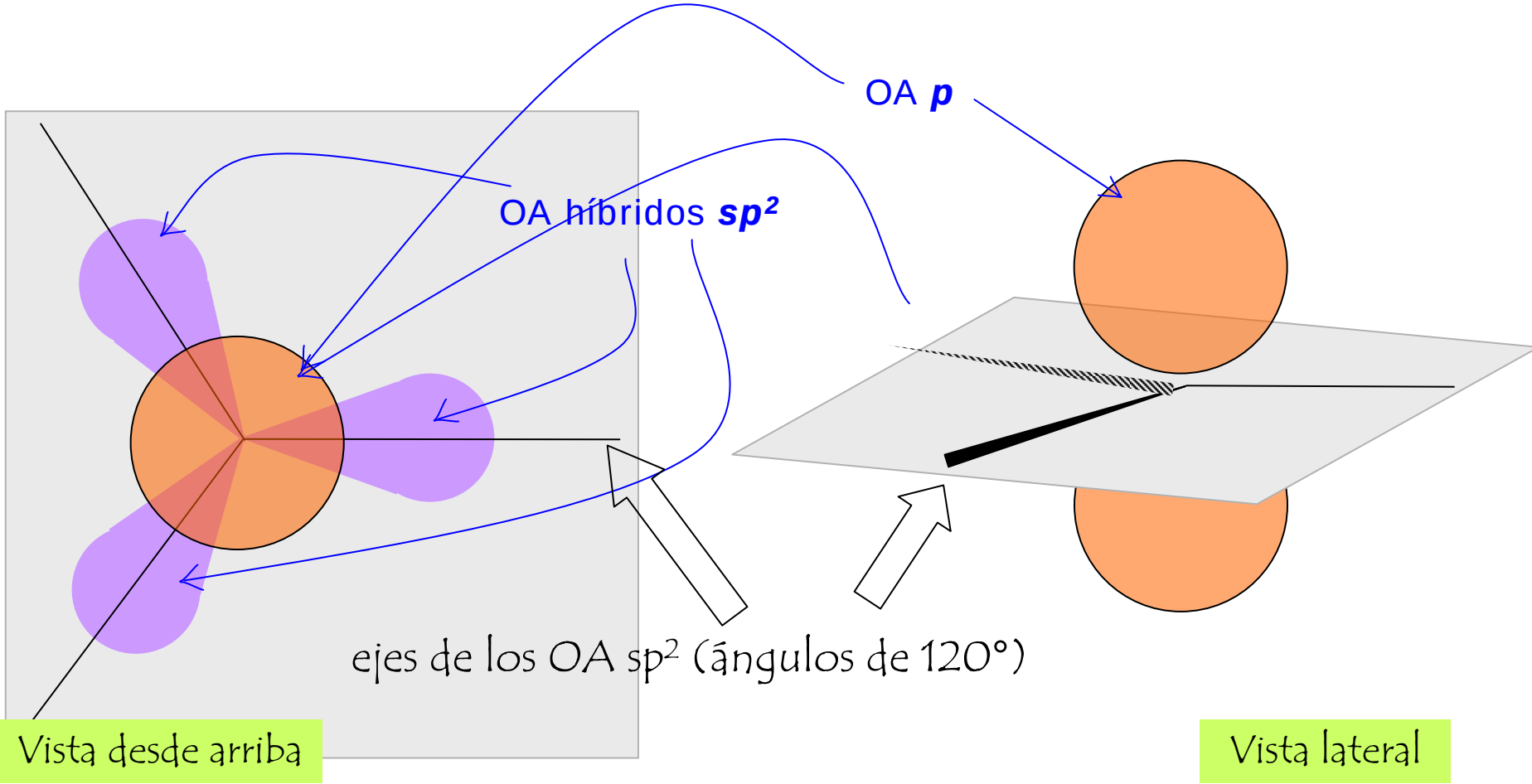
C $1s^2\ 2s^2 2p^1 2p^1$ —Energía→ C $1s^2\ 2s^1 2p^1 2p^1 2p^1$



Carbono con hibridación sp^2: tres orbitales sp^2 y un orbital $2p$.

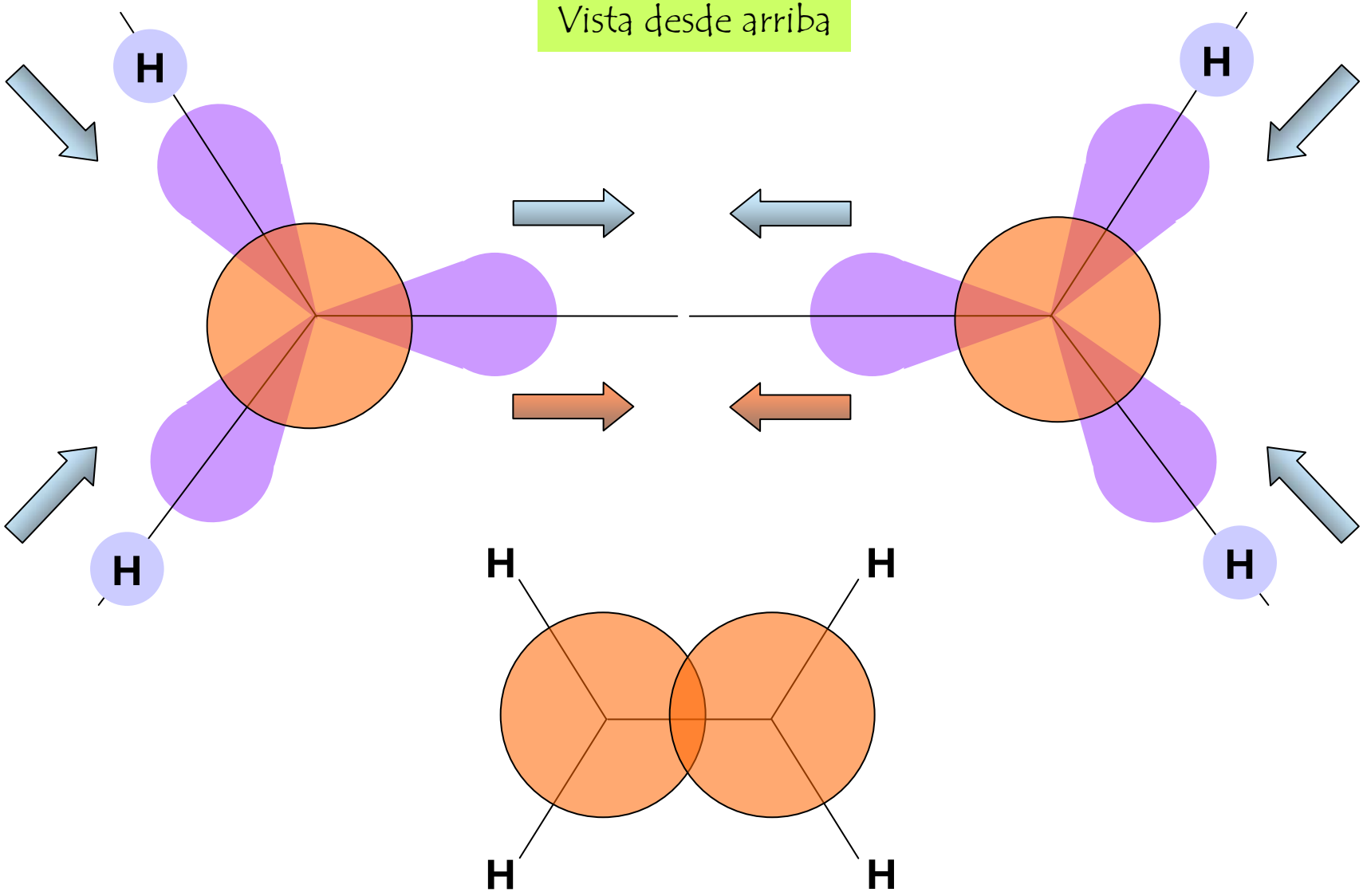


Orbital híbrido sp^2



Eteno

Vista desde arriba

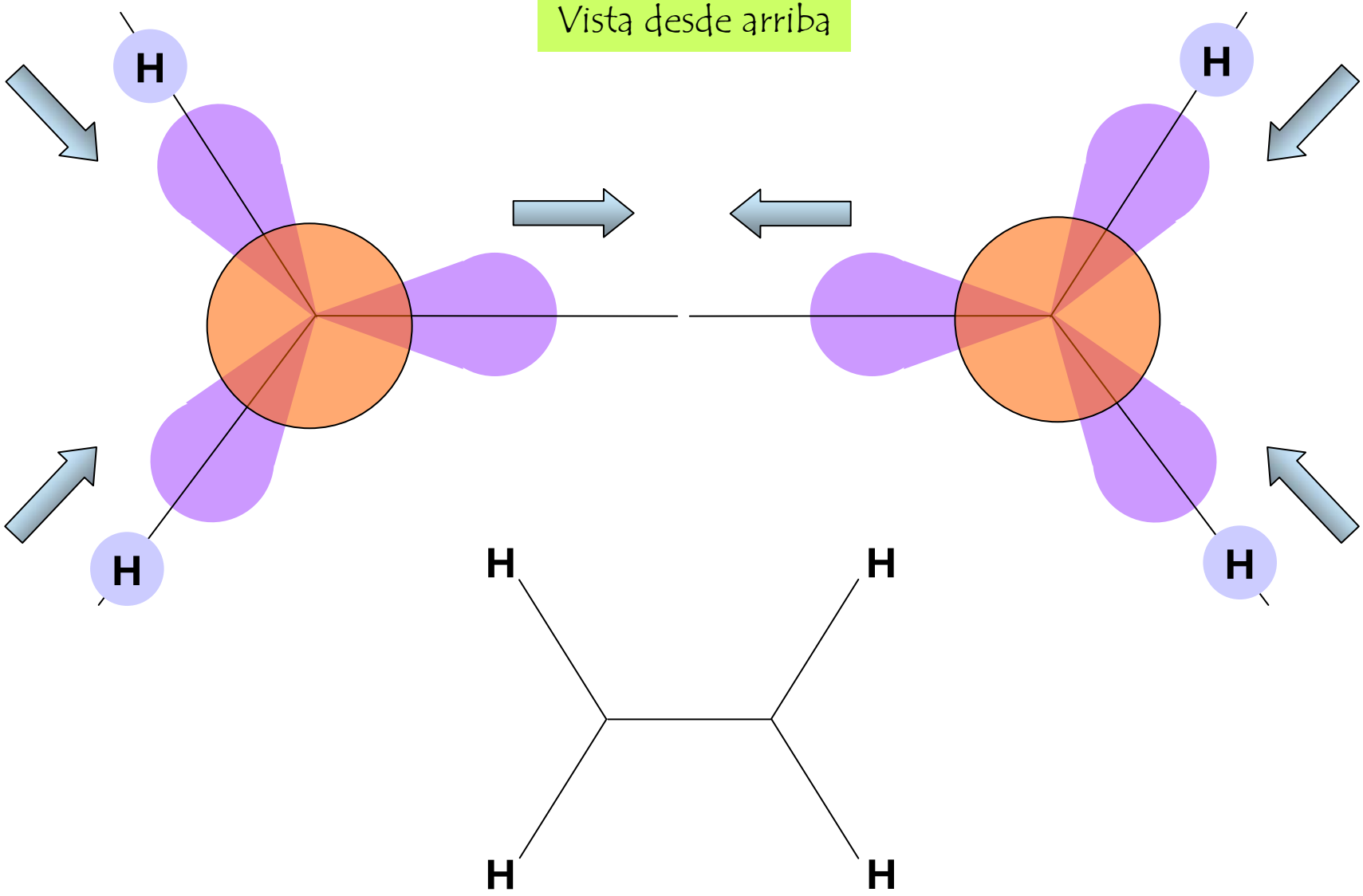


Enlaces σ

Enlace π

Eteno

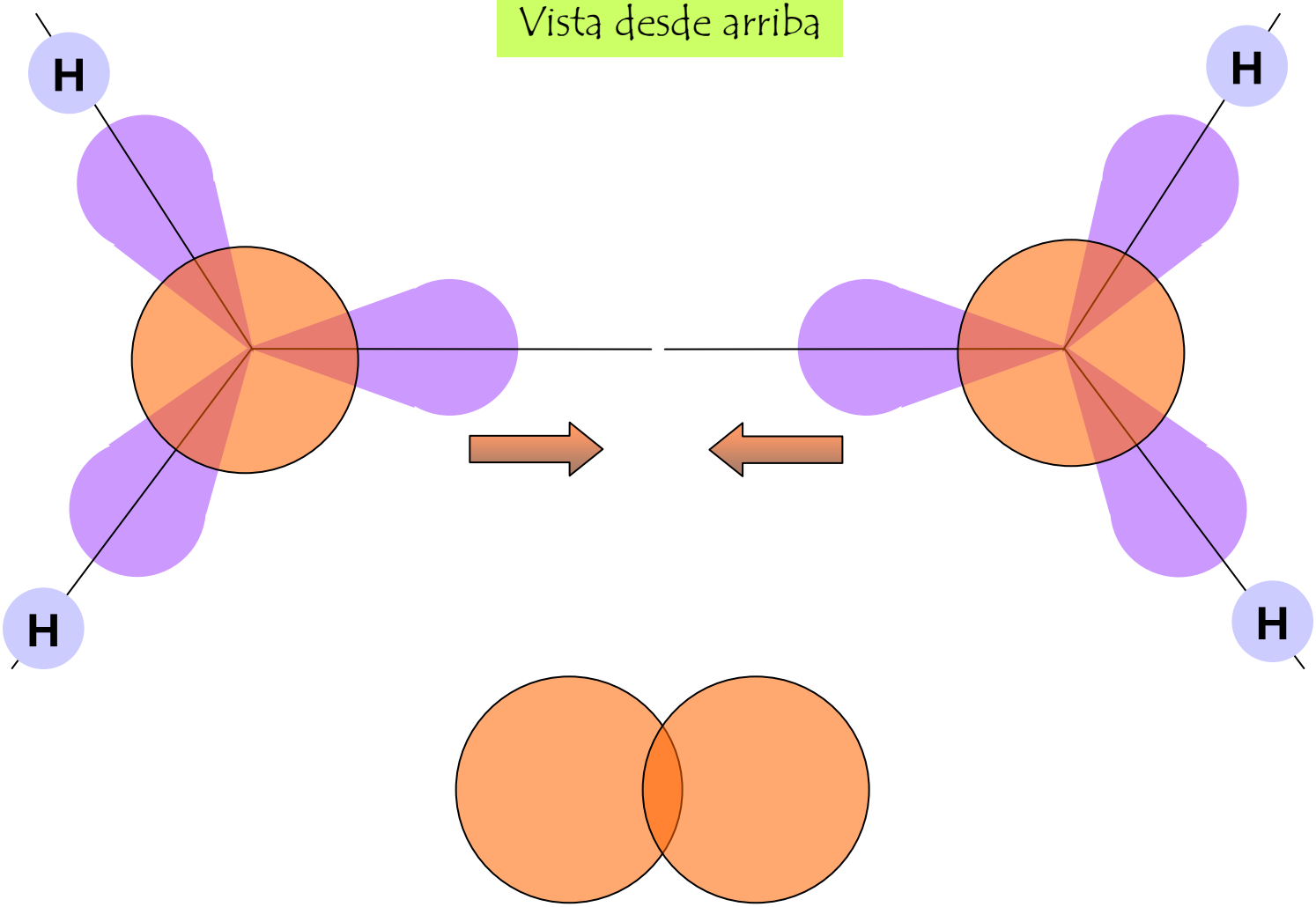
Vista desde arriba



Enlaces σ

Eteno

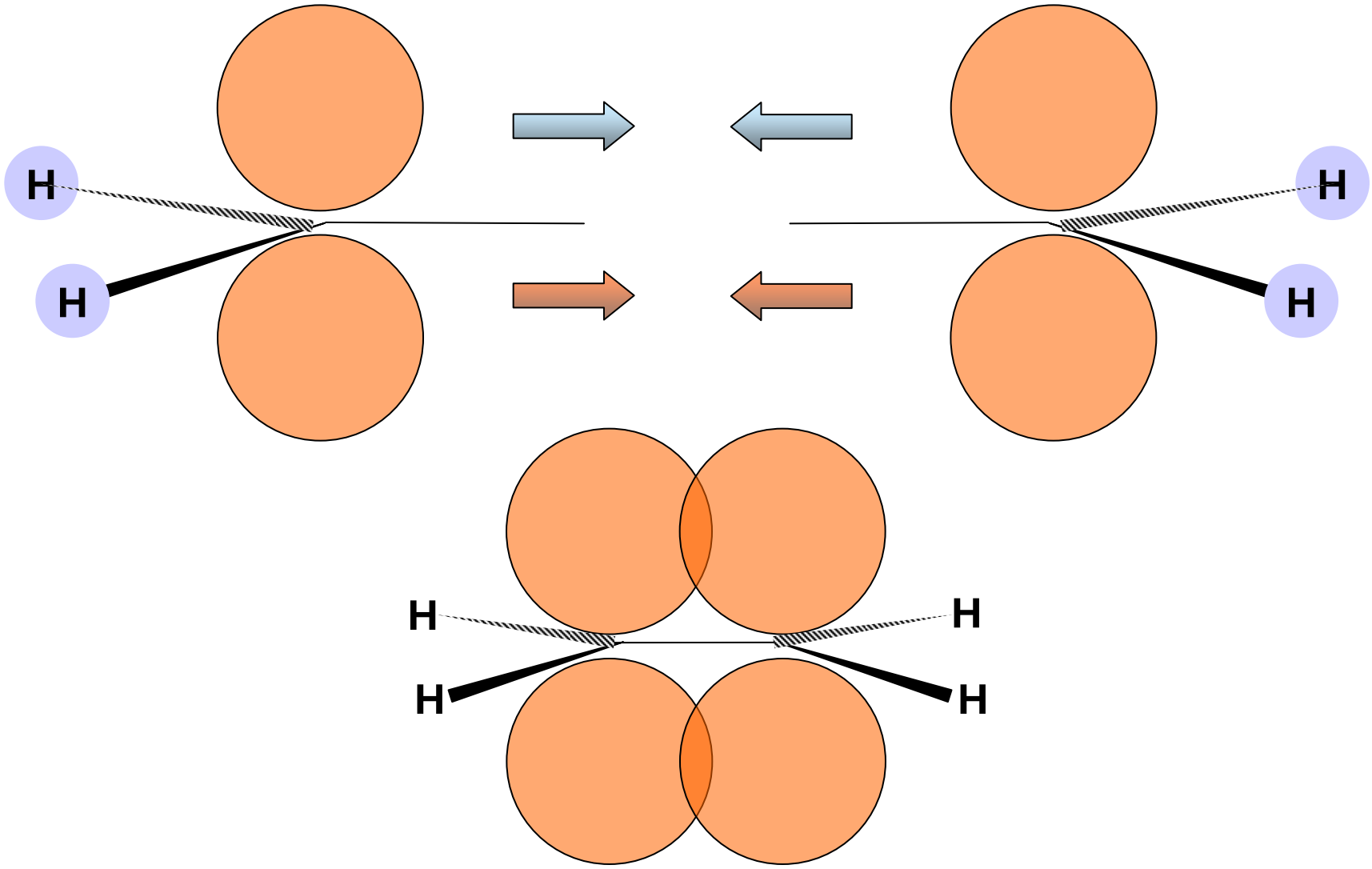
Vista desde arriba



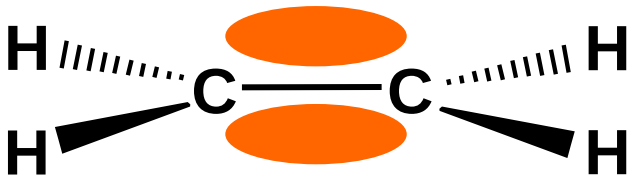
Enlace π

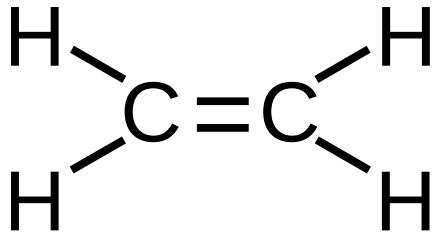
Eteno

Vista lateral



Eteno





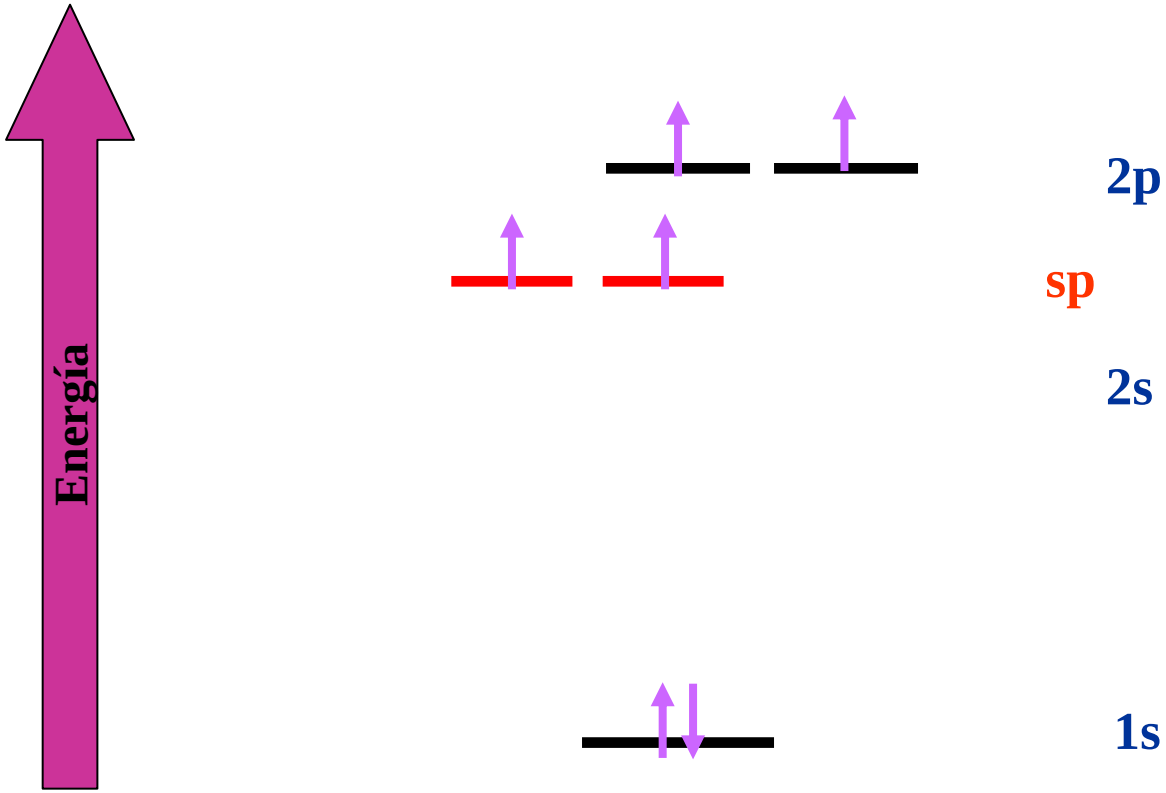
Molécula plana

Ángulos de enlace de aproximadamente 120°

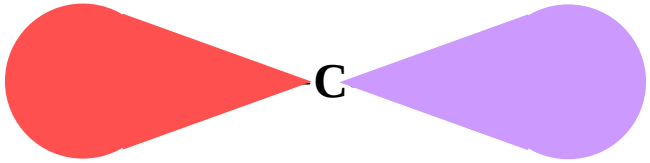
Hibridación de OA

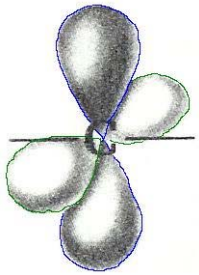
*Hibridación **sp** y la estructura de **etino**.*

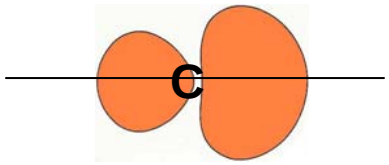
C $1s^2\ 2s^2 2p^1 2p^1$ —Energía→ C $1s^2\ 2s^1 2p^1 2p^1 2p^1$



Carbono con hibridación *sp*: dos orbitales *sp* y dos orbitales *2p*.



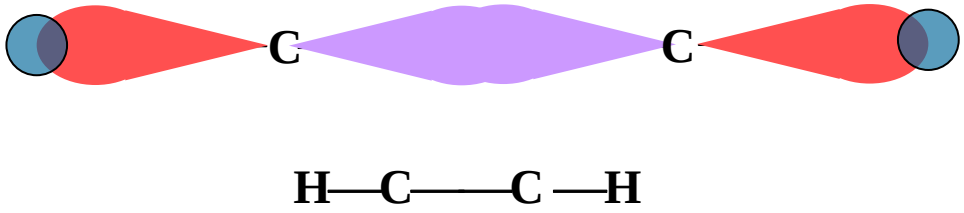




Orbital híbrido *sp*

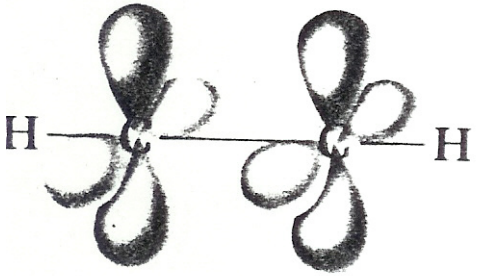
Etino

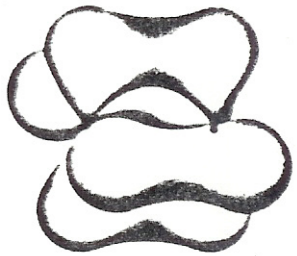
H–C≡C–H



H—C——C—H

Enlaces σ





Enlaces π

En resumen ...

Orbitales híbridos

Comparación de sus energías