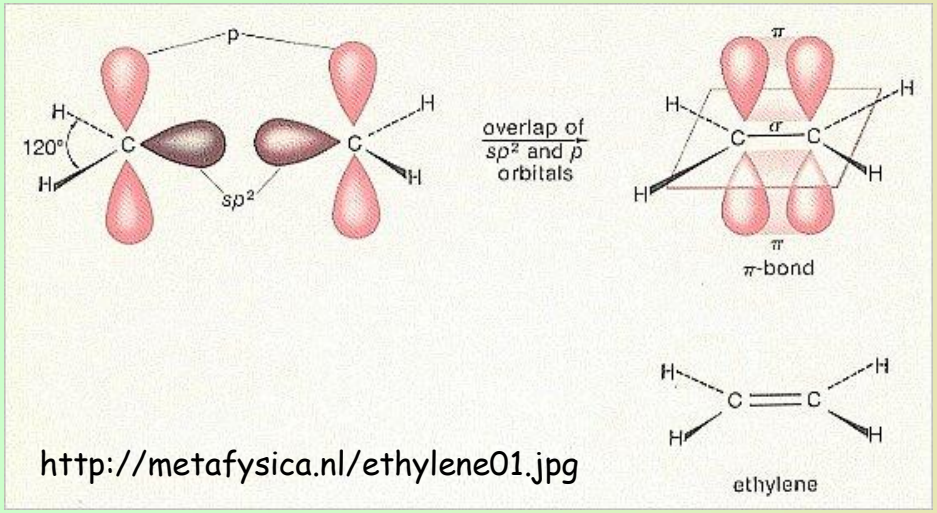
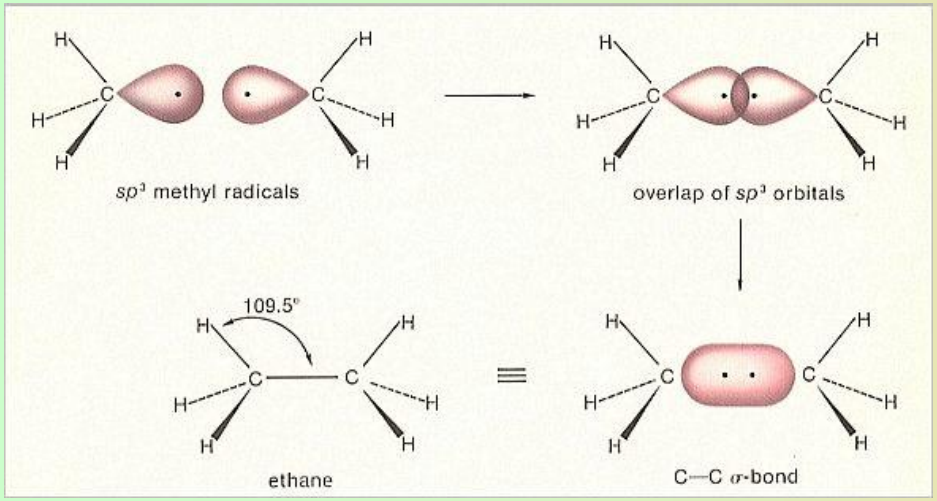
Rafa Muñoa
Lizardi Institutua
Zarautz

Sigma and Pi Bonds



http://metafysica.nl/ethylene01.jpg

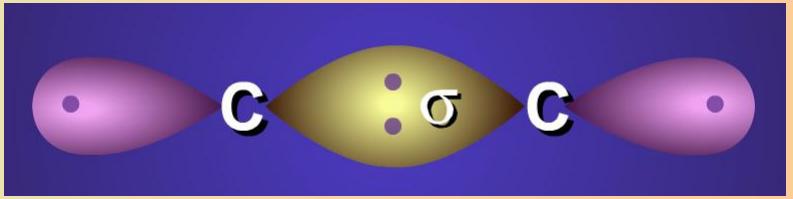


http://metafysica.nl/ethane01.jpg

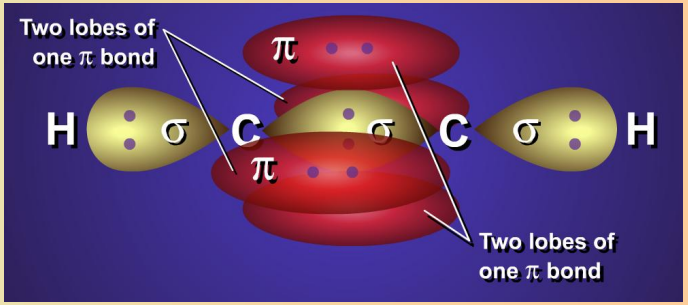
Introduction

There can be two types of orbital overlap when covalent bonds form:

- End-to-end overlap and sigma (σ) bonding

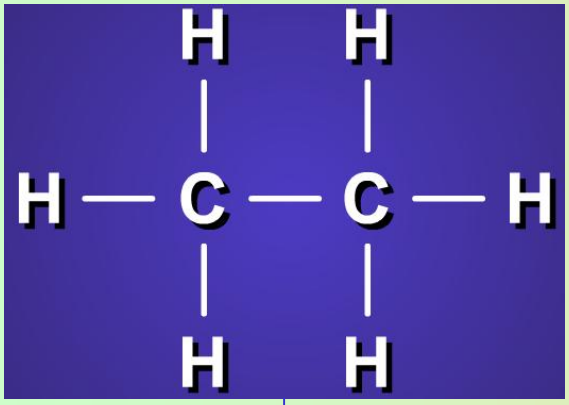


- Side-to-side overlap and pi (π) bonding



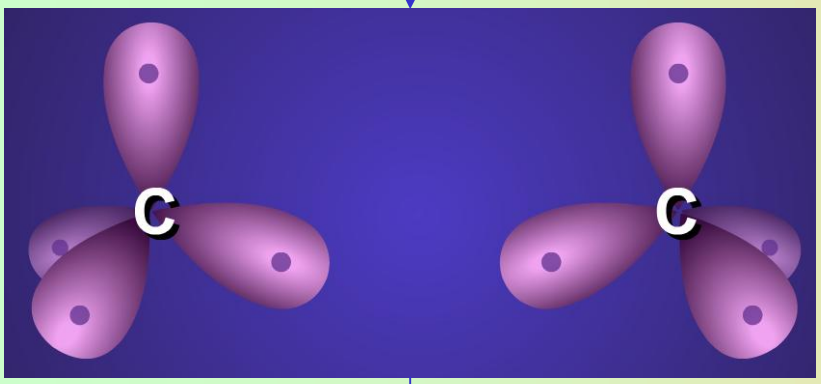
Rafa Muñoa
Lizardi Institutua
Zarautz

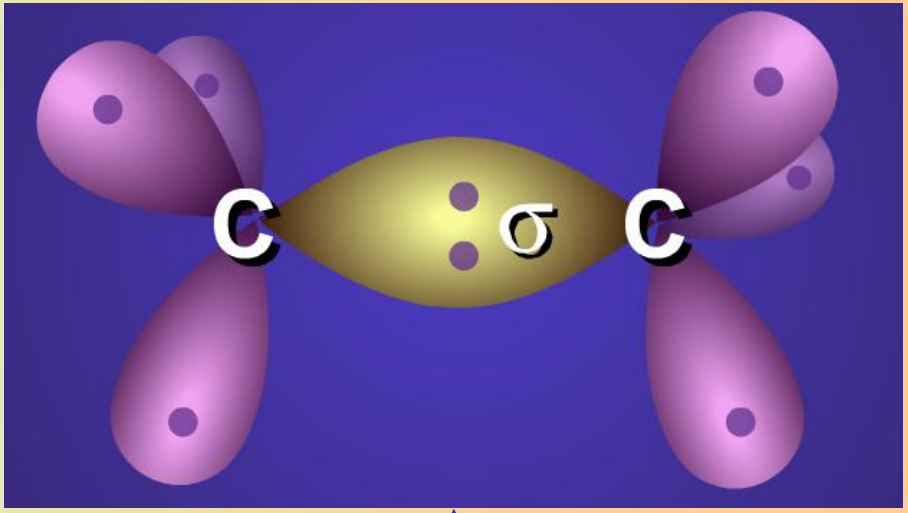
Sigma and Pi Bonds



Sigma Bonds

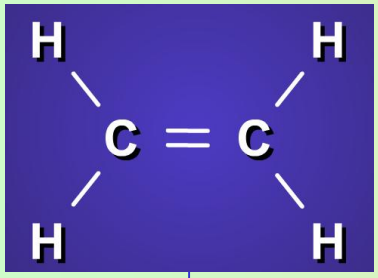
All single bonds, formed by any combination of overlapping hybrid, s, or p orbitals are sigma (σ) bonds.

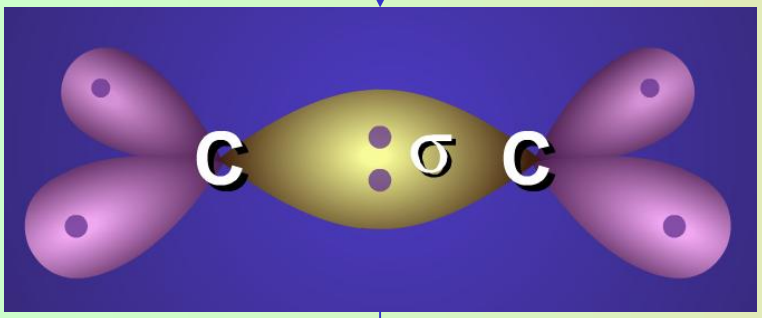


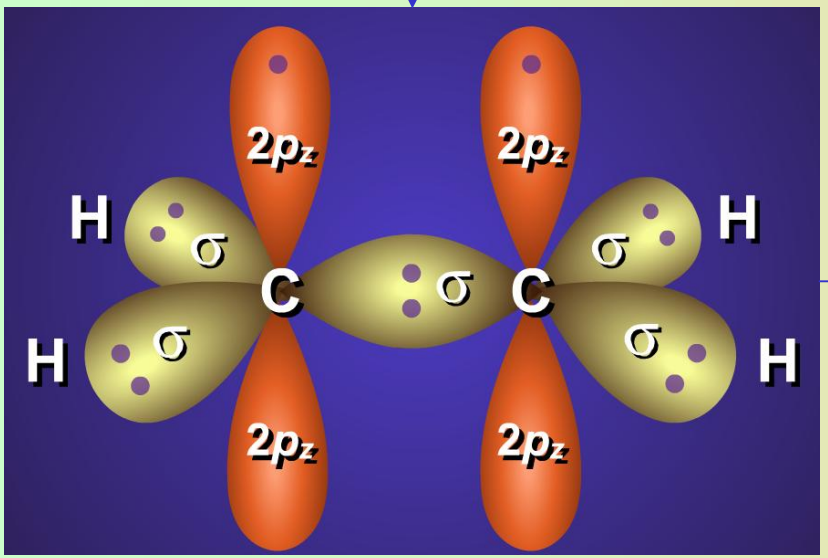


Rafa Muñoa
Lizardi Institutua
Zarautz

Sigma and Pi Bonds







Pi Bonds

Pi bonds are formed by overlapping p orbitals and these type of covalent bonds restrics the rotation of one atom relative to another.