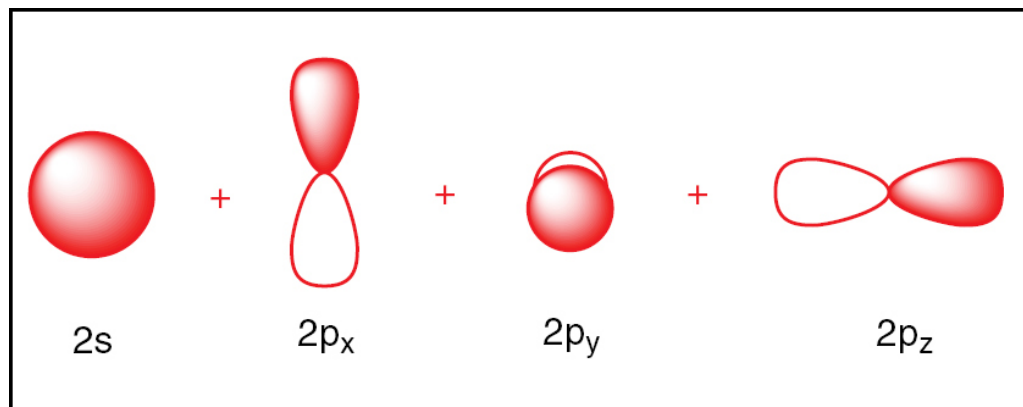
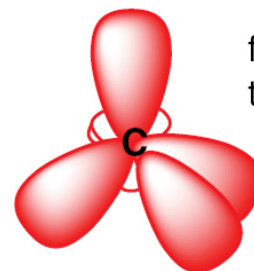
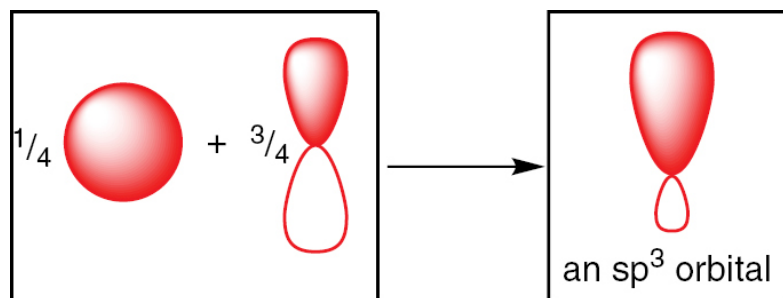


# ibridizzazione $sp^3$



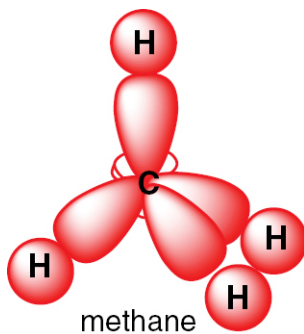
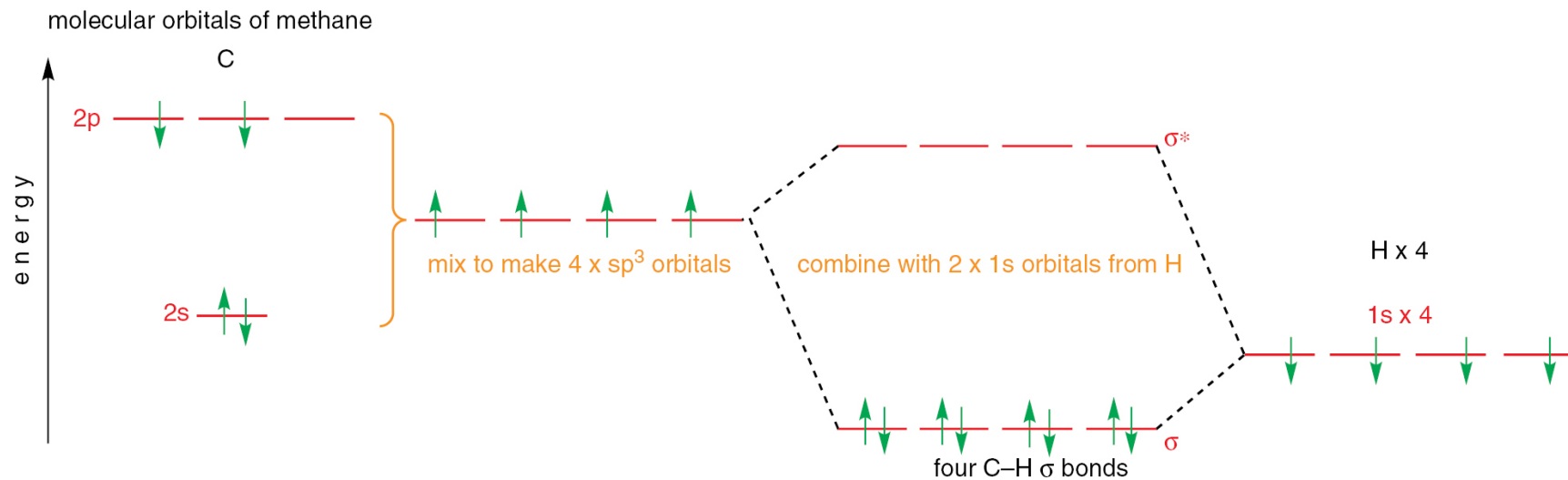
add together then divide into  
four equivalent hybrid orbitals:

$$\frac{s + p + p + p}{4} \longrightarrow 4 \times \underbrace{\left(\frac{1}{4}s + \frac{3}{4}p\right)}_{sp^3 \text{ orbital}}$$



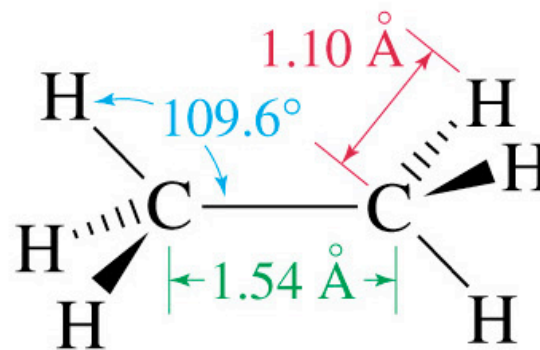
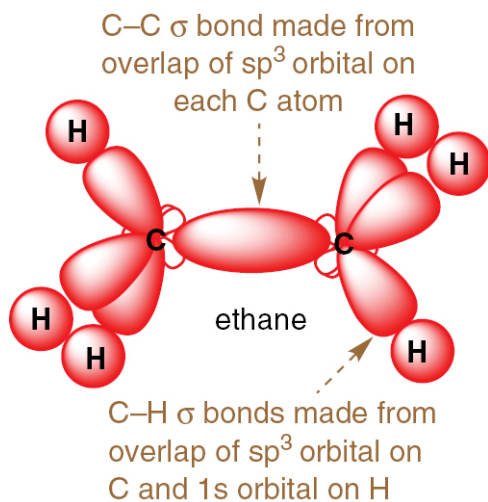
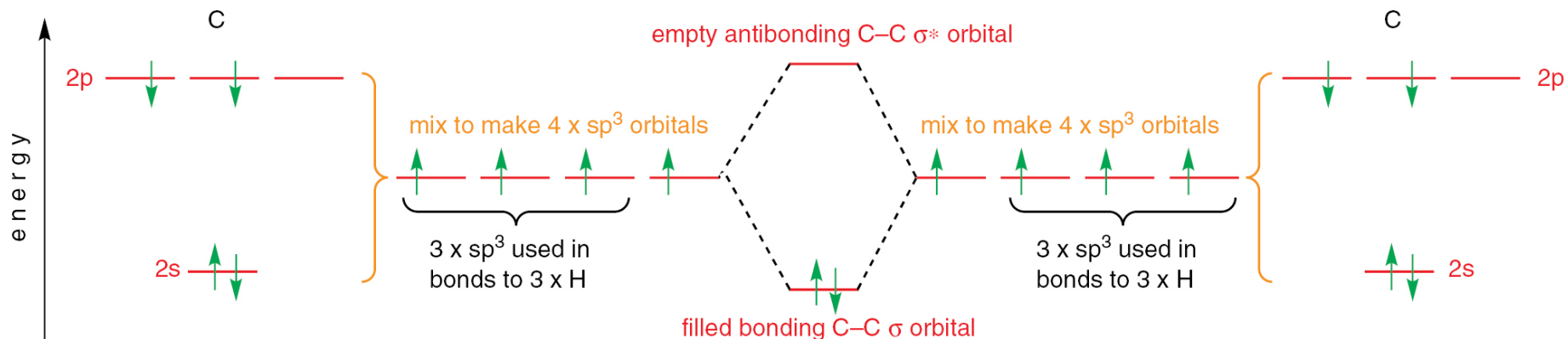
four  $sp^3$  on one C atom point  
to the corners of a tetrahedron

# metano



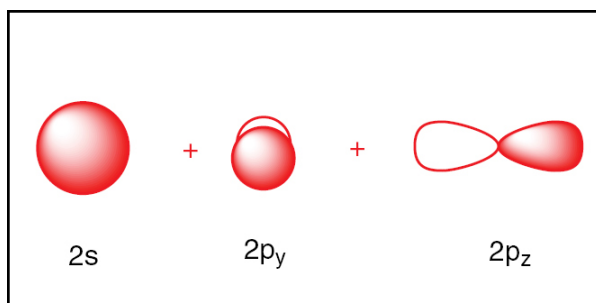
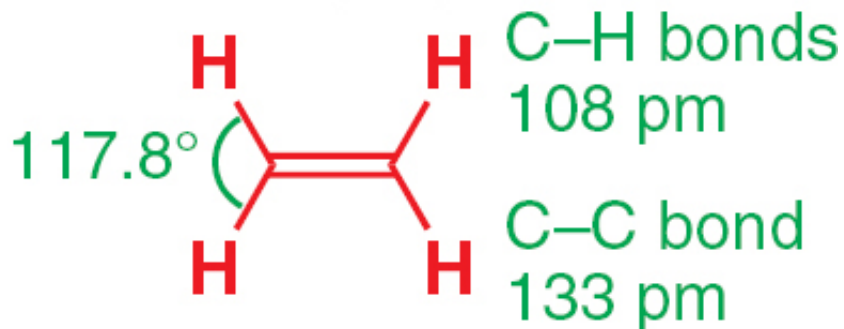
# ethane

molecular orbitals of ethane (just C–C bond shown)

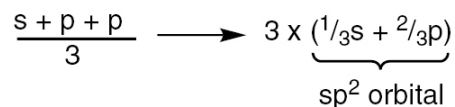


# etene (etilene)

ethene (ethylene)



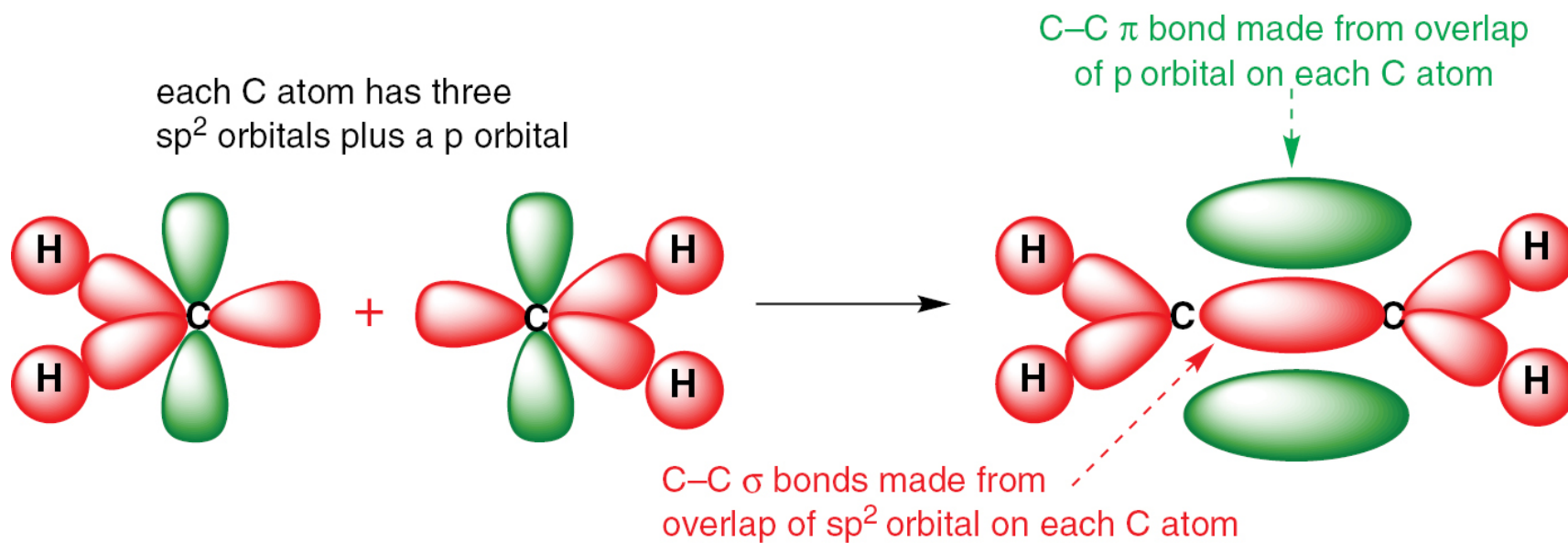
add together then divide into  
three equivalent hybrid orbitals:



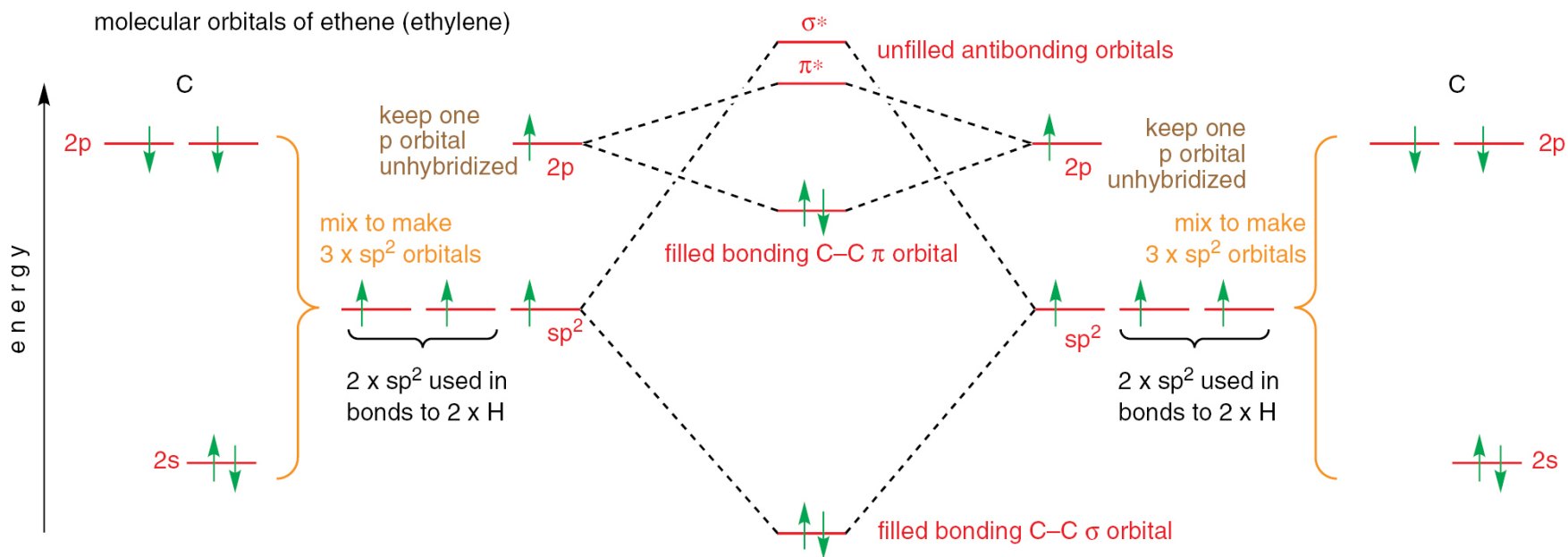
plus remaining 2p<sub>x</sub> orbital



# 101a

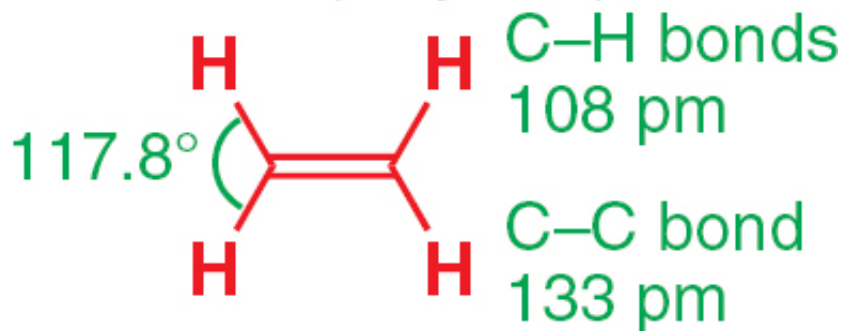


# diagramma degli OM dell'etene



# chemtube3D

ethene (ethylene)



**click the structure to  
visualize the orbitals of ethene**  
or go to: [www.chemtube3d.com/orbitalethene.htm](http://www.chemtube3d.com/orbitalethene.htm)

# isoprene

Isoprene is the main non-methane volatile organic compound (VOC) emitted by terrestrial vegetation (500 million tons per year worldwide) It strongly affects climate by influencing tropospheric ozone production and the formation of organic aerosol. Models currently estimate that 75% of isoprene is emitted from tropical terrestrial ecosystems.

