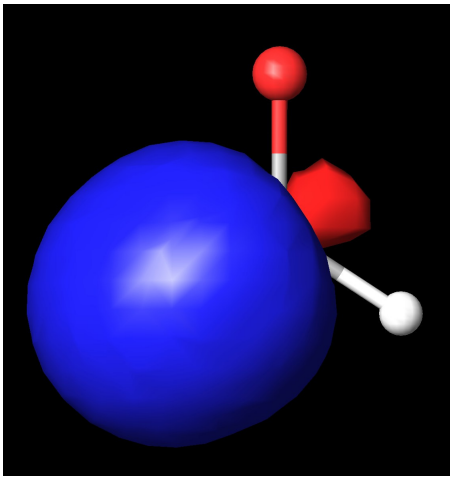
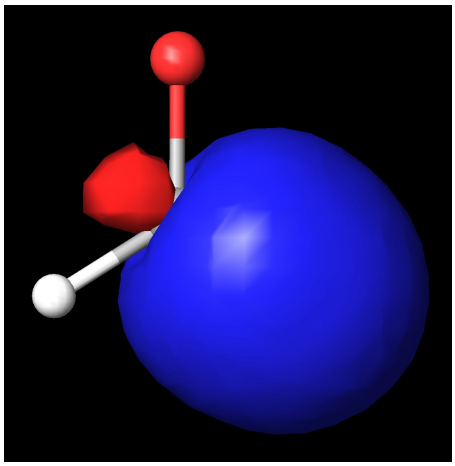
Formaldehyde – LMOs

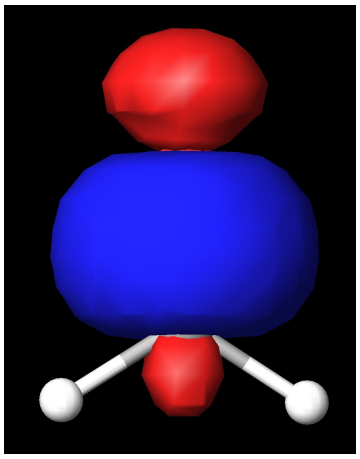
$H_2C=O$

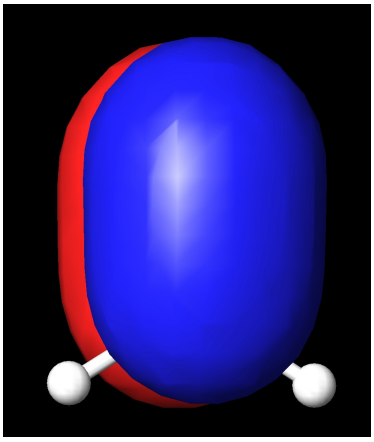
CH σ orbitals



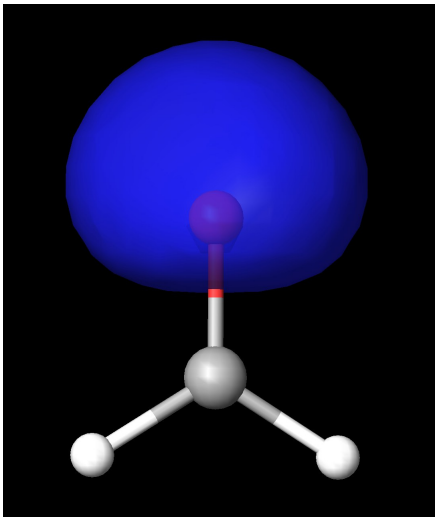


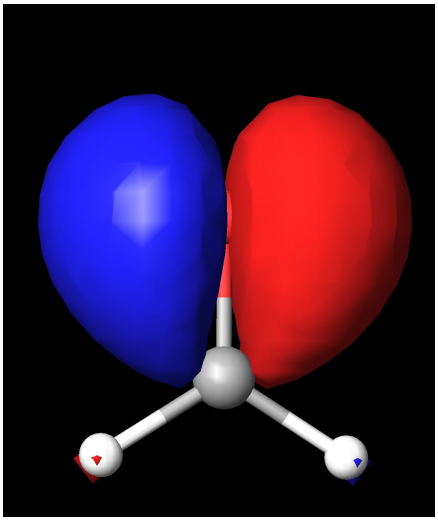
CO σ & π orbitals





O LP orbitals (“s” & “p”)





Final Comments

- Orbitals involving C look like they are based on sp^2 family
  - 3 identical σ bonds (from C perspective)
  - 1 π bond
- Orbitals involving O are harder to fathom
  - Computer program does not try to "fit" or "match" outcome to simple models like sp, sp^2 and sp^3
  - Different programs give different results
  - *Pick any set that works* and use it consistently