CONCEPT: DRAWING MOLECULAR ORBITALS
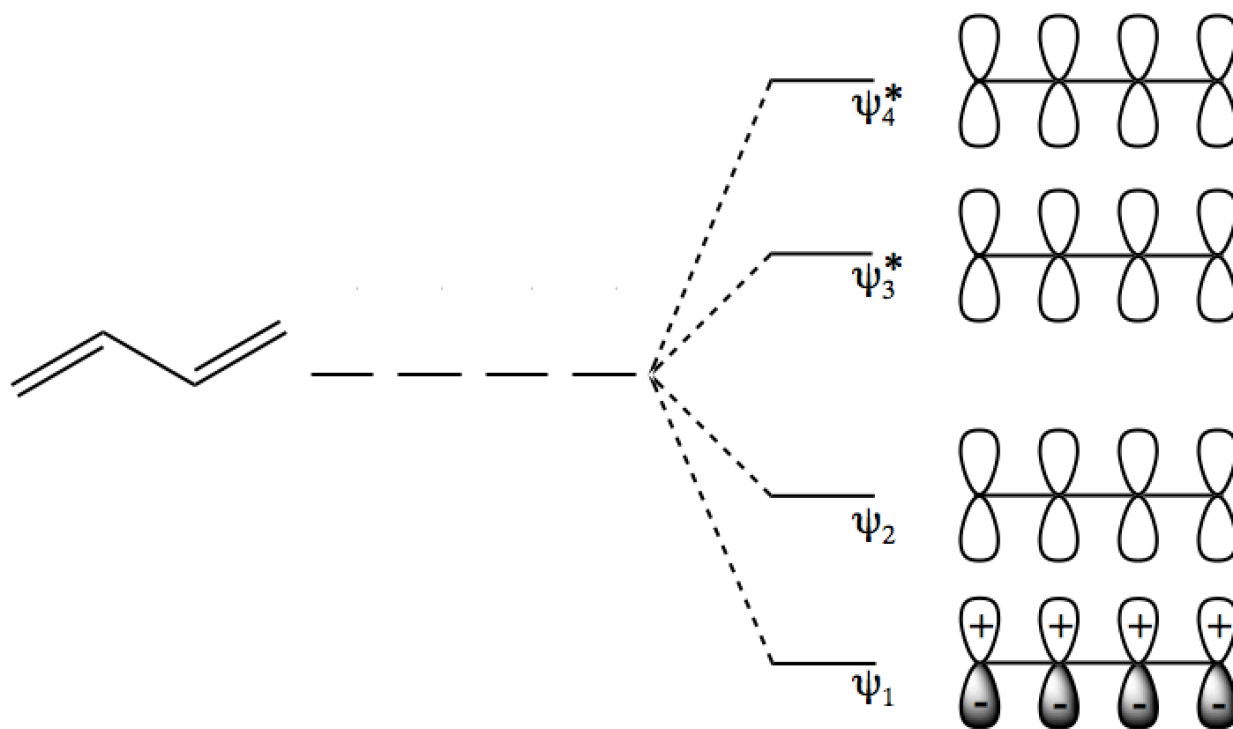
- Rules for drawing conjugated molecular orbitals:

    1. # molecular orbitals = # atomic orbitals

    2. One orbital *must never* change phases (1st is preferred)

    3. Last orbital *must always* change phases

    4. Number of nodes must begin = 0 and increase by 1 with each increasing energy level

    5. Nodes must be symmetrical as possible. If in doubt, draw *sin wave* from *fake atom* [0] to [n + 1].

    6. If a node passes through an orbital, *delete* that orbital.

    7. Fill molecular orbitals according to rules of electron configuration (Aufbau, Pauli, Hund's)

EXAMPLE: Provide the molecular orbitals of 1,3-butadiene.

PRACTICE: Propose reasonable molecular orbitals for the following conjugated atomic orbitals.

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ψ_1