

## Möbius aromaticity

A monocyclic array of orbitals in which there is a single out-of-phase overlap (or, more generally, an odd number of out-of-phase overlaps) reveals the opposite pattern of aromatic character to Hückel systems; with  $4n$  electrons it is stabilized (aromatic), whereas with  $4n + 2$  it is destabilized (antiaromatic). In the excited state  $4n + 2$  Möbius  $\pi$ -electron systems are stabilized, and  $4n$  systems are destabilized. No examples of ground-state Möbius  $\pi$ -electron systems are known, but the concept has been applied to transition states of pericyclic reactions [*See:* aromatic]. The name is derived from the topological analogy of such an arrangement of orbitals to a Möbius strip.

**See also:** Hückel  $4n + 2$  rule

**Source:**

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1141