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