

# Sigma-pi separation of the electron localization function and aromaticity

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The topological analysis of the sigma-pi separation of the electron localization function (ELF) to evaluate the aromaticity of planar compounds using the bifurcation values was described. The topology of the ELF  $\sigma$  and ELF $\pi$  functions were used to quantify the resonance concept. The aromaticity of aromatic compounds such as B<sub>6</sub>CO<sub>6</sub>, Al<sub>4</sub><sup>2-</sup> and N<sub>5</sub> were described by the highest bifurcation values. The stability from the two  $\sigma$  aromatic electrons and the  $\pi$  system in the plane of the molecules was obtained in the all-metal aromatic compounds.