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zero differential overlap (ZDO) approximation

An approach to the systematic neglect of the small-in-value electron repulsion integrals which is used in a number of approximate self-consistent field molecular orbital schemes. It means that all the products of atomic orbitals $\chi_\mu \chi_\nu$ are set to zero and the overlap integral $S_{\mu\nu} = \delta_{\mu\nu}$ (where $\delta_{\mu\nu}$ is the Kronecker delta). The ZDO approximation greatly simplifies the computation of wavefunctions by eliminating many of two-electron integrals. At the ZDO approximation all three- and four-centered integrals vanish.

Source:
PAC, 1999, *71*, 1919 *(Glossary of terms used in theoretical organic chemistry)* on page 1970

