

**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.

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