

# SELF-CONSISTENT THEORY OF COEXISTENT STRUCTURES IN NUCLEI

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A multiconfigurational extension of the Hartree-Fock method is developed, in which every configuration is optimized separately. The method is convenient for the self-consistent description of coexistent structures in the intrinsic state of even-even nuclei. This formalism is particularly suitable for the coexistent description of  $\alpha$ -clusters and the shell-model structure in light nuclei. Projected version of the Hartree-Fock method with parity mixing is a particular case of this theoretical scheme.

With very general assumption that every configuration is described in a separate basis set of single-particle functions, the secular equations of closed-shell type are derived. They can be solved self-consistently by the iterative procedure based on consecutive matrix triangularizations.