

Isovector and Isoscalar Pair Correlations in Nuclei with $N \approx Z$

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Abstract

Pairing correlation play an important role in defining properties in atomic nuclei. The study of pairing correlations continues to be a subject of active research in nuclear physics, with an emphasis of exotic nuclei. Especially interesting is a clarification of a competition between the isovector and isoscalar pairing forces. This problem is analyzed in the framework of the microscopic model with the constant pairing residual forces. The method of the finite boson representation [1] is used to separate the collective pairing modes and construct a collective Hamiltonian with isovector and isoscalar pairing degrees of freedom. The possible shapes of the collective potential energy are analyzed.

References

- [1] R.V. Jolos, V.G. Kartavenko and E.A. Kolganova, *Physics of Particles and Nuclei*, in press.