

Abstract Submitted
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The Nuclear Born Oppenheimer Method and Nuclear Rotations¹

NOUREDINE ZETTILI, Jacksonville State University — In this presentation, we want to discuss how to apply the Nuclear Born Oppenheimer (NBO) formalism to the description of nuclear rotations. This application will be illustrated on nuclei that are axially-symmetric and even (but non-closed shell). We will focus, in particular, on the derivation of expressions for the energy and for the moment of inertia. In addition, we will examine the connection of the NBO method with the self-consistent cranking model. We will compare the moment of inertia generated by the NBO method with the Thouless-Valantin formula and hence establish a connection between the NBO method and the large body of experimental data.

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