

### **3. SEMICLASSICAL INERTIA FOR NUCLEAR COLLECTIVE ROTATION**

**A. M. Gzhebinsky, A. G. Magner, A. S. Sitdikov**

The collective rotation motion is described within the local approximation of the semiclassical Gutzwiller trajectory approach to the response function theory through the cranking model. It is shown that the smooth local part of the moment of inertia for the collective rotation of deformed nuclei around the axis, perpendicular to the symmetry axis of the infinitely deep axially-symmetric square-well potential, is the rigid-body quantity. The “classical rotation” with the rigid-body inertia moment was found in the spherical limit.