

Abstract Submitted  
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**Investigation of the Spin cut-off Parameter of nuclear Level Density**<sup>1</sup> AZIZ N. BEHKAMI, Fars Science and Research Institute, Azad University, Iran — The spin cut-off parameter has been investigated within the microscopic approach based on the BCS Hamiltonian. This parameter has been determined for a long range of even-even, odd-A and odd-odd, light, medium weight as well as heavy and spherical and deformed nuclei. The spin cut-off parameter  $\sigma^2(E)$  has also be determined using the macroscopic methods and the results are compared with their corresponding microscopic values. It is found that the values of  $\sigma^2$  at neutron binding energy  $B_n$ , show structure reflecting the shell model orbitals near the Fermi energy. The huge difference between  $\sigma^2(B_n)$  deduced from the model calculations for nuclei near major shells indicates that the large angular momentum are responsible for their differences. In particular, the  $1f_{7/2}$ ,  $1g_{7/2}$  and  $1i_{11/2}$  proton orbitals and the  $1g_{9/2}$ ,  $1h_{11/2}$  and  $1i_{13/2}$  neutron orbitals play an important role in the  $\sigma^2(B_n)$  values.

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