Abstract
In this work, a model based on single particle plus pairing residual interaction was used to study the low-lying excited states of the 193Ir nucleus. In this model, the deformation parameters in equilibrium were obtained by minimizing the total energy calculated by the Strutinsky prescription; the macroscopic contribution to the potential was taken from the Liquid Droplet Model, with the shell and pairing corrections used as microscopic contributions. The nuclear shape was described using the Cassinian ovoids as base figures; the single particle energy spectra and wave functions for protons and neutrons were calculated in a deformed Woods-Saxon potential, where the parameters for neutrons were obtained from the literature and the parameters for protons were adjusted in order to describe the main sequence of angular momentum and parity of the bandheads, as well as the proton binding energy of 193Ir. The residual pairing interaction was calculated using the BCS prescription with Lipkin-Nogami approximation. The results obtained for the first three bandheads (the 3/2+ ground state, the 1/2+ excited state at E ~ 73keV and the 11/2- isomeric state at E ~ 80keV) showed a very good agreement, but the model so far greatly overestimated the energy of the next bandhead, a 7/2- at E ~ 299keV.

Keywords
Ir-193, Beta decay, Spectroscopy.