SEMINARIUM FIZYKI JĄDRA ATOMOWEGO

Dnia **04.06.2020 r.** (czwartek) o godzinie **10:15** odbędzie się seminarium on-line, na którym wygłoszony zostanie referat:

„Nuclear Collective Excitations and Realistic Models”

link do seminarium: https://meet.google.com/afb-cwio-wum

Abstract: It is pointed out that the experimental evidence for the proposal that excitations of nuclei at low energy are collective “vibrations” is dubious, to say the least. Data are presented that demonstrate that the approximation of monopole pairing is insufficient, especially in situations where prolate deformation can extrude high-K Nilsson orbitals from a closed lower full shell to the Fermi surface. These orbitals give rise to 0_2^+ states near the middle of the pairing gap of even-even nuclei and are better described in the “pairing isomer” approximation.

If these 0_2^+ states in the pairing gap of e-e nuclei are not “β vibrations”, then what about the $K = 2^+$ rotational bands that are also observed well within the pairing gap ?? The view is taken that these bands occur because the nuclei are triaxial and the experimental evidence to support this will be discussed.

Recent models of nuclear structure that give more realistic descriptions of the data will also be discussed. In particular, the Monte-Carlo Shell Model (MCSM), the Triaxial Projected Shell Model (TPSM) and the Five Dimensional Collective Model (5-DCM).

referuje: **prof. John Sharpey-Schafer (Somerset-West, South Africa)**

K. Rusek, J. Skalski, W. Urban