Szanowni Państwo,

Zapraszamy na cotygodniowe Seminarium Fizyki Jądra Atomowego.
Link (ten sam dla wszystkich spotkań), aktywny w każdy czwartek w godz.
od 10.00 do 12.00 to:

https://us02web.zoom.us/j/86759935850?pwd=ejZhaHBjUTNncVVDZFJTRnVaYW9MQT09
ID: 867 5993 5850
Passcode: 909432

Seminarium, które odbędzie się w czwartek 26 listopada 2020 o godz. 10:15, wygłosi **prof. Costel Petrache z Uniwersytetu Paris-Saclay we Francji.**

Tytuł seminarium:
"Chirality and wobbling in nuclei: new achievements and perspectives"

Abstract:

The breaking of symmetries in quantum systems is one of the key issues in nuclear physics. In particular, the spontaneous symmetry breaking in rotating nuclei leads to exotic collective modes, like the chiral and wobbling motions, which have been intensively studied in recent years. Chiral bands in even-even nuclei, which were taught to be un-favoured energetically, unstable against 3D rotation and difficult to observe, have been instead identified very recently in ^{136}Nd. Multiple chiral bands have been also identified in the neighbouring ^{135,137}Nd nuclei, and pseudospin-chiral quartet bands in the presence of octupole correlations have been identified in ^{131}Ba. These new experimental results triggered many theoretical developments and extensions of the previous models, which are now able to describe complex band structures resulting from chirality-parity violation in triaxial nuclei with reflection asymmetry. An overview of the latest experimental results and theoretical developments will be presented.

The wobbling motion is another topic related to triaxial nuclei, with new results and theoretical developments under intense current debate. The first evidence of wobbling bands built on two-quasiparticle configurations has been recently found in ^{130}Ba. Several low-spin bands in odd-even nuclei have been interpreted as wobbling bands with transverse or longitudinal coupling between the odd nucleon and the triaxial core, but the experimental evidence on the collective transitions connecting the wobbling partners is often contradictory. Recent theoretical works revealed the inadequacy of the wobbling interpretation of these low-spin bands, which in reality are tilted precession (TiP) bands. The recently published results and their interpretation will be discussed.

K. Rusek, J. Skalski, W. Urban