ID de Contribution: **24** Type: **Non spécifié**

Direct chiral geometry measurement, the proof of concept

lundi 10 juillet 2023 15:00 (1 heure)

Experimental study of the nuclear chiral symmetry resembles the Schroedinger's cat problem where the direct observation of an object, here its handedness, is prohibited within the todays experimental methods. The nuclear chirality measurements are thus limited to indirect observables related to states superimposed over unobserved values. Such superpositions are built of the same amount of opposite handedness configurations that mutually cancel in the expectation values of handedness sensitive operators. However, there is still a possibility of a direct nuclear chirality measurement since the existence of the handedness only matters, not the value of the handedness itself. Thus the direct chirality measurement means the determination of the nucleus chiral structure regardless of the handedness present in the superimposed states. Such a direct measurement has been performed by observation of the magnetic dipole moment in ^{128}Cs nucleus and the first results were published in 2018. The magnetic dipole moment can therefore serve as an ultimate test for chirality in nuclear physics. More details about the concept of the measurement, experimental techniques and obtained results will be present.

Author: GRODNER, Ernest (National Centre for Nuclear Research, Swierk, Poland)

Orateur: GRODNER, Ernest (National Centre for Nuclear Research, Swierk, Poland)

Classification de Session: Session