Contribution ID: **26** Type: **not specified**

Shape Coexistence in the Neutron-Deficient 188 Hg Isotope

Tuesday, 4 September 2018 16:05 (15 minutes)

Shape coexistence is a characteristic phenomenon of finite many-body quantum systems where different nuclear shapes coexist within the typical energy range of nuclear excitations. The principle behind this phenomenon is the contrast between two different forces: on one hand valence nucleons and np-nh excitations drive the nucleus to collective configurations; on the other hand, pair forces and shell effects lead to a spherical shape. Shape coexistence is significantly present in the neutron-deficient isotopes around Z = 82, in particular light isotopes of Hg. From the systematics of the mercury isotopes, 188Hg is expected to be the heaviest isotope where two different shapes coexist. However, information the electromagnetic properties of low-lying states is scarce or absent for 188Hg. For these reasons, an investigation of 188Hg states is of great interest for a better comprehension of shape coexistence in this region.
In order to shed light on the features of such phenomenon in the neutron-deficient Hg nuclei, an experiment was performed at the Laboratori Nazionali di Legnaro, employing GALILEO, a HPGe detectors array, coupled with Neutron Wall and with a dedicated plunger. The 188Hg nucleus was populated via fusion-evaporation reaction and the lifetime of its low-lying states was measured for the first time.
In the contribution, the preliminary results and their theoretical interpretation will be discussed.

Selected session

Nuclear Structure and Dynamics

Primary authors: GOASDUFF, Alain (Università di Padova - INFN Sezione di Padova); ZANON, Irene (INFN LNL); SICILIANO, Marco (LNL); Mr JOHN, Philipp Rudolf (PD)

Presenter: ZANON, Irene (INFN LNL)

Session Classification: Nuclear Structure and Dynamics (SALONE BOLOGNINI)