



Contribution ID: 7

Type: **Contributed talk**

## Complementary study of double-octupole states in $^{150}\text{Sm}$

We present preliminary results from a recent investigation performed at ILL to study the presence of the negative-parity components in the structure of positive-parity states in atomic nuclei. In order to identify the candidates for such states one has to investigate the excited states in medium mass nuclei around  $N=88$  using various probes. The first experiment was performed in Munich and was a two-neutron transfer reaction in order to find the correct energy of various levels and their total angular momentum. The second investigation was a beta-decay study to populate the low-spin states in  $^{150}\text{Sm}$  and to determine their gamma decay pattern. Therefore, the experiment performed at ILL using the  $^{149}\text{Sm}(n,g)$  reaction was concentrated on determining the decay pattern of the medium-spin levels and therefore, completes a series of experimental investigations on  $^{150}\text{Sm}$ . Gamma rays were detected using the FIPPS array composed of 16 clover detectors, eight of them being supplied by IFIN-HH. The reaction has populated a large number of states up to about 8 MeV with spin numbers typically around  $J=4$ . Key information will be extracted from the decay of these states and their angular correlation measurements.

**Primary authors:** Dr PASCU, Sorin (IFIN-HH); Dr MICHELAGNOLI, Caterina (ILL); Dr KOESTER, Ulli (ILL); JENTSCHHEL, Michael (Institut Laue-Langevin); Dr MARGINEAN, Nicolae (IFIN-HH); MARGINEAN, Raluca (IFIN-HH); Dr MIHAL, Constantin (IFIN-HH); Dr MUTTI, Paolo (ILL); Dr NITA, Cristina (IFIN-HH); Mr TUR-TURICA, Andrei (IFIN-HH)

**Presenter:** Dr PASCU, Sorin (IFIN-HH)