



Contribution ID: 180

Type: Poster

## Stochastic features of decay of the multipole giant resonances in nuclei

Thursday, 3 September 2015 16:30 (1h 30m)

We present generalized multi-configuration model to describe a decay of hmultipole giant resonances (MGR), which is based on shell model and microscopic model of pre-equilibrium decay with statistical account for complex configurations within generalized Zhivopistsev-Slivnov model [1,2]. All possible configurations are divided on two groups: i) complicated configurations, which are considered within shell model with account for residual interaction; ii) statistical group of complex configurations for input state a diagonalization of residual interaction on the increased basis (ph, ph+ phonon, ph+2 phonon) is performed. Process of arising a collective state of MGR and an emission process of nucleons are described by the corresponding diagram with V effective Hamiltonian of interaction, resulted in capture of muon by nucleus with transformation of proton to neutron and emission by antineutrino. Isobaric anagoges of isospin and spin-isospin resonances of finite nucleus are excited. Proposed model of MGR decay is applied to analysis of reaction (-n) on nucleus 40Ca. The residual interaction was chosen in form of Soper force. Our data are compared with experimental data and other calculation data.

[1] A. Glushkov et al., New Projects and New lines of research in Nuclear Phys., eds. G. Fazio, F. Hanappe (World Sci.. Singapore, 2003); A. Glushkov, Nucl. Phys A 734S, 21 (2004).

[2] H. Feschbach et al., Ann. Phys. 125, 429 (1980); F. Zhivopistsev et al., Izv. AN USSR 48, 821 (1984); I. Vaytkowska Nucl. Phys. 15, 1154 (1972).

Primary author: KHETSELIUS, Olga (Odessa University -OSENU)

**Co-authors:** Prof. SVINARENKO, Andrey (Odessa State University -OSENU); Dr LOVETT, Ludmila (UK Nat. Academy of Sci. and Bookdata Co., London); Dr DUBROVSKAYA, Yulia (Odessa State University -OSENU)

Presenter: KHETSELIUS, Olga (Odessa University -OSENU)

Session Classification: Poster