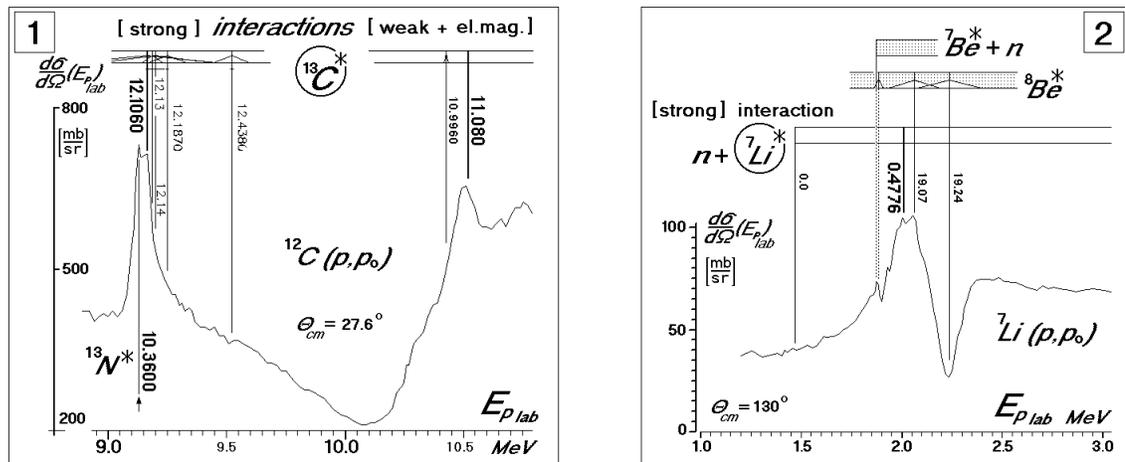


Confirmations of the New Observed Phenomena of the "COMBINATIV ISOBAR RESONANCES" - CIRs

A.A. Gafarov, A.V. Khugaev, Yu.N. Koblik, A.D. Avezov, B.S. Yuldashev

Institute of Nuclear Physics, Tashkent, Uzbekistan E-mail: renat@sult.silk.org

Many years, in the Nuclear Reaction Physics are known Resonances in the *Target-projectile*-system (RTPS) and fluctuations in cross-sections. What are they for certain? Very likely, answer to this can now become the most way to review all content of the Fusion Cycles... Recently in high energy-resolution measures of Excitation Functions (EFs) at cyclotron using MSS-approach was obtained [1,2] the cross-section curve with 14 well known and large number of the RTPS which were identified only in suggestion that before the final nuclei&particles it take place formation of the isobaric charge-forbidden nuclei with the charge-equilibrium particle(s) inside [2,3]. These phenomena, enlarging number of the energy-accessible combinations of final products, display in $d\sigma(E)/d\Omega$ the respective additional anomalies named CIRs, arising due to the little known projectile-stimulated soft π [4,5]. CIR validity is confirmed [3] by the peaks found in [6,7] another EFs (see \square , \boxtimes – lines of the forbidden nuclei $^{13}C^*$ (12.106 MeV and 11.080 MeV) and $^7Li^*$ (0.4776 MeV) through the CIR).



1. A.A.Gafarov et al. / *Setup for measurement the differential cross-sections of nuclear reactions on the Method of Spectra Superposition.*/(Rus.Journal) PTE N² 4. 1989.p.47-53.
2. A.D.Avezov, A.A.Gafarov, Y.N.Koblik, D.A.Mirkarimov, A.V.Morozov, B.S.Yuldashev / *Resonances in Excitation Function of Reaction $^{12}C(p, p_0)$ in region $E_p=16\div 19.5$ MeV.*/ LEND-95 XV Nucl.Phys.Divis.Conf., St.-Petersburg, Russia, April 18-22, 1995. p.469-472.
3. A.A. Gafarov et al./*The Combination Resonances Phenomenon in Intermediate System [$^{12}C+p$] from $^{12}C(p, p_0)$ in Region $E_p=5\div 19.5$ MeV.*/Proc.of the Int.Seminar ISS'97 Structure of Particles and Nuclei and their Interactions. Tashkent,Oct.6-13.1997, Dubna 1998,p.221-225.
4. A.B. Migdal / *Fermions and bosons in strong fields.* Moscow, 1978, p.31-149.
5. T.E.O. Ericson / *Physics with Beams of Virtual Pions.*/ CERN-TH .7228/94
- 6 T. Yamasaki et al. // *Discovery of the deeply bound π^- states in the $^{208}Pb(d, ^3He)$ reaction.*// Z.Phys. A 355, 219-221 (1996)
7. J.B.Swint, A.C.L.Barnard, T.B.Clegg and J.L.Weil/ Nucl.Phys.86.(1966). p.119-129.
8. Philip R. Malmberg // Phys.Rev.101. 116 (1956).