

## Search for highly excited states of ${}^6\text{Li}$ isotope in ${}^{12}\text{C}(\pi^-, \text{tt})\text{X}$ stopped pion absorption reaction

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Search for highly excited states of  ${}^6\text{Li}$  lithium isotope was carried out in stopped pion absorption reaction by the carbon target  ${}^{12}\text{C}$ . The measurements were carried out at low energy pion channel of LANL with two-arm multilayer semiconductor spectrometer [1]. The missing mass resolution during the registration of a pair of tritons was  $\leq 1$  MeV.

In the correlation measurements of  ${}^{12}\text{C}(\pi^-, \text{tt})\text{X}$  reaction we have found  ${}^6\text{Li}$  ground state and the levels with the excitation energy  $2.2 \text{ MeV} < E_x < 5.6 \text{ MeV}$ . The parameters of these states are in agreement with the world data within errors.

There are three excited states lying above the threshold  ${}^6\text{Li} \rightarrow {}^5\text{Li} + n$  with  $E_x < 19 \text{ MeV}$ . The level with  $E_x = 9.3 \pm 0.3 \text{ MeV}$  and the width  $\Gamma = 3.0 \pm 0.5 \text{ MeV}$  was found for the first time. There are also indications on the level structures in the area of  $29 \text{ MeV} < E_x < 34 \text{ MeV}$ .

The isobar-analog states of  ${}^6\text{He}$  were also found.

[1] M.G. Gornov et al., Nucl. Inst. and Meth. In Phys. Res. A, 2000, V. 446, P. 461.

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