Transmutation measurements in accelerator-driven subcritical sets
- the use of threshold nuclear reaction for determining the fast neutron flux density

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The aim of the project was the research about neutron flux in the experimental assembly based on natural uranium and proton beam from accelerator („Quinta" experiment, 2015). To gain the knowledge about the neutron flux, a threshold reaction was used. The better knowledge about neutron flux density could be useful to constructing the fourth generation and accelerator-driven subcritical nuclear reactors.

Conclusions: Parameters of „Quinta" assembly were very similar to conditions provided in the ADS reactors. After the experiment it's able to make measurements which gives us the isotopes level productions. Basing on the measurements, using knowledge about nuclear reactions and parameter equations we were able to assign the average neutron flux density inside our experimental assembly.

Our results are compatible with expectations from previous experiments.