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Virtual Laboratory –virtual educational tools and hands-on practicum

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Experiments have always been an integral part of the experimental sciences, and are one of the most effective ways to get first-hand knowledge about certain concepts and principles in a study field such as nuclear physics.

The Virtual Lab project (VLab) has a history of several years and now project results are used in the educational process universities in 13 countries. The first stage of the project was devoted to creation of the Virtual Laboratory of Nuclear Fission (www.v-labs.ru).

Currently the project is developing in three directions:
–Virtual laboratory of gamma spectroscopy
–Laboratory of detectors and signal processing. Laboratory of data analysis in ROOT
–Preparation and conduct of hands-on practicums for university and high school students

In the framework of the VLab project several hands-on practices were successfully held for university and high school students from different countries. During the practices students started their work with signal generators, oscilloscopes, coincidence circuits, scintillation counters, and finished assembling a simple scintillation telescope that allowed them to register cosmic radiation particles. Then, under supervision of young scientists, students worked with gamma-, X-ray and light ion spectrometers. Attention was given to the analysis of experimental data.

We are very interested to collaborate with teachers and scientists from the JINR Member States and Associate Members to develop the VLab project.

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