

## Test of a Pellet Target Tracking system in a Cluster-Jet setup.

A pellet target tracking (PTR) system for the future PANDA experiment at FAIR, Darmstadt, Germany is being developed here in Uppsala at IFA and TSL. It is based on fast line-scan CCD cameras and structured-light-pattern diode-laser that detects 25  $\mu\text{m}$  sized frozen hydrogen pellets in a stream crossing a plane  $<0.1$  mm thick. This system should also be useful for monitoring of a cluster-jet target and tests of this possibility are planned during 2018 in an experiment at the COSY accelerator at Forschungszentrum Jülich, Germany.

The main goal of this project is to prepare and evaluate a simplified PTR setup to be used in these tests. At a cluster-jet there are some differences with respect to operation at a pellet stream that the existing system has to be adapted for. For this purpose a stand-alone desktop system including equipment for fine mechanical tuning and optimization of camera and laser optics will be set up.

In the desktop studies a dummy target will be used and methods and devices for these studies as well as special data-taking procedures must be prepared. The produced camera data must be analyzed and the results evaluated using simple models.

Knowledge/interest in relevant experimental techniques, DAQ and analysis software (we use VC++ and root) is required.

The work will be done at the The Svedberg Laboratory (English Park Campus).

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