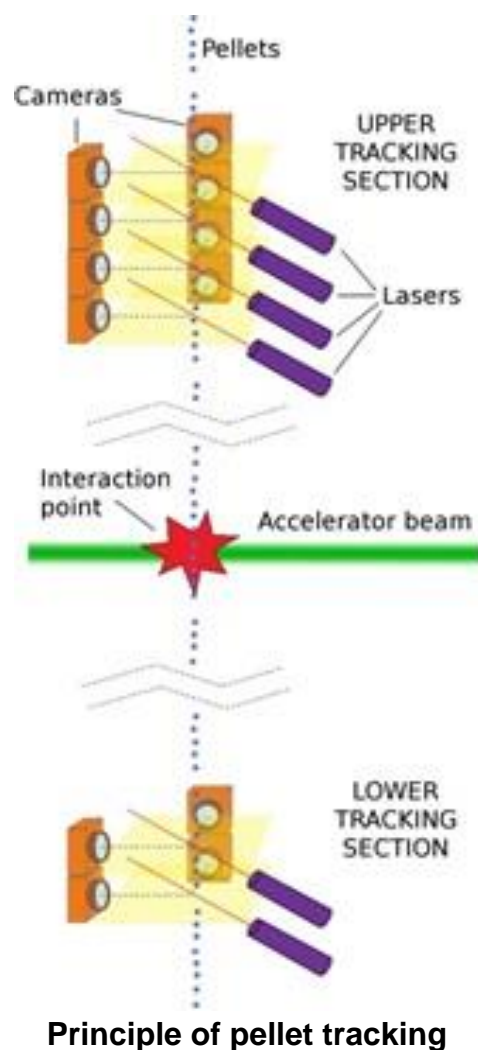


Test of a Pellet Target Tracking system in a Cluster-Jet setup.

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 μm 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 this year in an experiment at the COSY accelerator at Forschungszentrum Jülich, Germany. The main goal of this degree thesis work is to prepare a PTR setup for these tests and if possible also participate in installation and running at COSY. With a cluster-jet there are some differences with respect to operation with the pellet stream that the system has to be adapted for.



The work involves the setting up of a stand-alone system including equipment for fine mechanical tuning and optimization of camera and laser optics. Also special data-taking and data analysis procedures must be prepared.

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

The work can start immediately.

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