

Scientific supervisor	
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Department	Department of Experimental Computational Physics
Laboratory	Measurement laboratory
Group webpage	www.brand.if.uj.edu.pl
Proposed research topic	
<i>Construction and characterization of the cold neutron beam halo scanner</i>	
Short description (< 1000 characters)	
<p>Scanning techniques applied to various types of particle beams delivering information on spatial intensity distribution is commonly used technique in physics research and its applications. Beams of slow neutrons with velocity of about 1 km/s generated by nuclear reactors or spallation sources are used in the research of the structure of matter and fundamental particle physics. In the planning of experiments and analysis of experimental data the spatial density distribution is a key information. The constructed scanner will be used on the cold neutron beam at the Laue-Langevin Institute, Grenoble, France. In the framework of the summer internship, the student (he/she) will participate in the construction and characterization of a scanner that utilizes the semiconductor light sensors for detection of neutrons. Involved students will have chance for carrying out laboratory measurements using weak radioactive calibration sources and existing equipment.</p>	
Main research tool	
<ul style="list-style-type: none"> - silicon photomultipliers - computer 	
Additional requirements to the candidate	
<ul style="list-style-type: none"> - basic knowledge of Linux - manual and technical skills 	
Possibility to continue student internship in the form of:	
Diploma thesis (master's or bachelor's degree)	X
PhD study	X