

| Scientific supervisor | |
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| Name | Grzegorz Zuzel |
| E-mail | Grzegorz.zuzel@uj.edu.pl |
| Department | Department of Experimental Computer Physics |
| Laboratory | Low-level radioactivity laboratory |
| Group webpage | |
| Proposed research topic | |
| <i>Characterization of the underground laboratory in Książ</i> | |
| Short description (< 1000 characters) | |
| <p>In the frame of the Earth System Science Core Facility POB Anthropocene flagship project carried out at the Jagiellonian University, and in cooperation with the Centrum for Space Research and the Institute of Geophysics of the Polish Academy of Sciences, a new facility dedicated to high-sensitivity gamma-ray spectroscopy has been set up in the underground laboratory in Książ. Other research requiring a reduced signal from cosmic muons will also be carried out there. The Książ laboratory is located in the underground of the Książ Castle, excavated during the World War II. It is a series of tunnels cutting through the hill on which the castle was built. Our new facility is located in one of the tunnels 50 meters below the castle courtyard and meets all the standards of a typical laboratory equipped with all utilities, including an Internet connection for remote monitoring of measurements.</p> <p>In the frame of the internship, students will participate in research aimed at full characterization of the laboratory, in particular, performing:</p> <ul style="list-style-type: none"> - muon flux measurements, - Radon Rn-222 concentration measurements, - gamma background measurements, - measurements of the flux of thermal neutrons. <p>The realization of the internship will require travel to Książ.</p> <p>There is also the possibility for the students to be involved in the installation of a new highly sensitive gamma spectrometer in the Książ laboratory.</p> | |
| Main research tool | |
| Muon detector, radon detector, portable gamma-ray spectrometer, neutron detectors (helium counters). | |
| Additional requirements to the candidate | |
| Basic knowledge about the detection of radiation | |
| Possibility to continue student internship in the form of: | |
| Diploma thesis (master's or bachelor's degree) | X |
| PhD study | X |