Seminarium Studium Doktoranckiego NCBJ
<u>**Thursday, 9 January, 9:00**</u>
<u>**Sala 404 w NCBJ, Pasteura 7**</u>

Speaker:
Michał Mazurek (Studium Doktoranckie NCBJ)

Title:
Development of the Active Radiation Monitoring System of the LHCb Experiment at CERN

Abstract:
The main goal of this work was to improve the LHCb Active Radiation Monitoring System (LbARMS) of the LHCb Experiment taking place at the European Organization for Nuclear Research (CERN). A new predictive algorithm was devised based on the Outlier-Robust Kalman Filter and Rauch-Tung-Striebel formula. The algorithm operates in quasi-real time in a Supervisory Control And Data Acquisition (SCADA) system. In addition, a new calibration model was suggested for RADFETs (RADiation-sensitive Field Effect Transistors) covering saturating range. A new Graphical User Interface (GUI) was created, which displays and monitors the results produced by the correction algorithm. It also assists the user in replacing the sensors if necessary. Finally, LbECSData and LbARMS web APIs were developed in order to read and present data coming from the Experiment Control System (ECS).