

Title: *Tests of Silicon detectors for the ATLAS detector upgrade*

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Abstract: This thesis is focused on the testing of prototypes of strip silicon detectors for the modernization of ATLAS detector on ATLAS Upgrade. These tests take place at the Department of Silicon Detectors at the Institute of Particle and Nuclear Physics. The main focus of this work is the description of tests of Front-end parameters of the detector using the calibration charge and laser. The first chapter of this thesis briefly describes, how the experiment in particle physics works, and summarizes the basic facts about the ATLAS detector and its upgrading. The second chapter describes the physical properties of semiconductors that are needed to understand the principle of particle detection by silicon detectors. It also describes how to read and process information from the detector. The third and fourth chapters describe the testing of FE parameters of the detector, done itself by the author of this work. Conclusions from these measurements will serve to further tests of strip silicon detectors for ATLAS Upgrade.

Keywords: *ATLAS Upgrade, laser tests, Front-end electronic, strip silicon detector*