

Ionizing radiation causes bulk and surface damages in silicon detectors. The significant bulk damage is caused also by neutrons. Those damages influence the detection performance of silicon strip detectors. The main purpose of this thesis is to study the effects of radiation damage in silicon strip sensors by performing electrical tests on them. Tested silicon strip sensors were designed for the replacement of the current Inner Detector of the ATLAS experiment by a new all-silicon Inner Tracker. This replacement is needed because of the upgrade of the Large Hadron Collider (LHC) into the High-Luminosity LHC.