

Nowadays, the detector ATLAS is modernized to ATLAS Upgrade. The Institute of Particle and Nuclear Physics contributes to it by testing and production of silicon detection modules, which will be used for this purpose. This thesis is focused on the development of methods of accurate assembling of detection modules, especially to verify that the chips are properly glued to the hybrid using the ConoScan 4000 metrological station. One of the measurement outputs are three coordinates of the corners of the chips. To achieve higher accuracy, instead of determining the coordinate z of the chip relative to the ConoScan reference system, the height was determined relative to the hybrid. For each chip, the angle of rotation was determined in the individual planes. To verify the reproducibility of the measurement by ConoScan, 50 identical measurements of the hybrid profile were scanned, from which the processed results are plotted in histograms. Better results can be achieved by selecting a smaller scanning step of ConoScan along the x and y axes.