

DEPFET pixel detectors were developed more than 20 years ago and they are still being improved, for example on Belle II experiment in Japan. In this thesis we studied the properties of readout cycle of detector matrix and the movement of counted hit positions close to the edges of DEPFET matrix, the which is reffered to as edge effect. The main goal of this work was to familiarize with particle detectors and their principles, especially with DEPFET matrices, to set up laser test system and to write ROOT macro for measurement automatization, run the measurement and analyze obtained data. For this purpose we used red 3 nanosecond long laser pulses, moving stages with very fine step and two connected pulse generators. As a result, the voltage between the outer ring and the inner part of the detector active area was optimalsed, the edge effect was reduced by a factor of 2. The time properties of readout cycle, the time period of charge clearing and the time in which is the matrix read out, have been found.