

The subject of this thesis is the study of a rare $\pi^0 \rightarrow \nu\bar{\nu}$ decay. The first part of this thesis contains the evaluation of the branching ratio of this decay using the precisely measured dominant $\pi^0 \rightarrow \gamma\gamma$ decay and a discussion of the theoretical background. Then in the second part is a preparation for the experimental measurement of this decay which is divided to a description of an experiment and used apparatus and the data analysis from the $K^+ \rightarrow \pi^+\pi^0$ decay on data from the 2016 run. Specifically the efficiency of the calorimeter for the dominant $\pi^0 \rightarrow \gamma\gamma$ decay is analysed.