

Abstract

In this thesis, basic characteristics of neutrinos and their oscillations, i.e. phenomenon, in which initial neutrino flavor after travelling a certain distance is changed to another, are summarized. The primary unknown parameters connected with this phenomenon and possibilities of measurement are introduced, mainly as goals of the currently constructed NOvA experiment under american research facility Fermilab. General principles of the experiment are described, as well as structure and function of detectors being built. Neutrino interactions that can take place in detector and their identification by interpreting measured data are discussed. Events considered as signal are differentiated, types of background are mentioned along with ways to distinguish them from signal. Examples of data from Monte Carlo simulations in the form of histograms created using program ROOT are given.