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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Overview of the T2K experiment -- The Fine-Grained Detector -- Pion Interaction measurement at TRIUMF M11 Beamline -- Extraction of Pion Absorption and Charge Exchange Cross Section -- Improvement of pion interaction model -- Monte Carlo Simulation for the Oscillation Analysis -- Near Detector Measurement -- Far Detector Measurement -- Oscillation Analysis and Results -- Conclusion.
Sommario/riassunto	<p>In this thesis the author contributes to the analysis of neutrino beam data collected between 2010 and 2013 to identify θ_{13} events at the Super-Kamiokande detector. In particular, the author improves the pion–nucleus interaction uncertainty, which is one of the dominant systematic error sources in T2K neutrino oscillation measurement. In the thesis, the measurement of θ_{13} oscillation in the T2K (Tokai to Kamioka) experiment is presented and a new constraint on CP is obtained. This measurement and the analysis establish, at greater than 5 significance, the observation of θ_{13} oscillation for the first time

in the world. Combining the T2K ν_e oscillation measurement with the latest findings on oscillation parameters including the world average value of θ_{13} from reactor experiments, the constraint on the value of CP at the 90% confidence level is obtained. This constraint on CP is an important step towards the discovery of CP violation in the lepton sector.
