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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Neutrino Oscillation -- The Double Chooz Experiment -- Double Chooz Data -- Measurement of Neutrino Oscillation Parameters -- Conclusion.
Sommario/riassunto	This book is based on the author's work at the Double Chooz Experiment, from 2010 to 2013, the goal of which was to search for electronic anti-neutrino disappearance close to nuclear power plant facilities as a result of neutrino oscillation. Starting with a brief review of neutrino oscillation and the most important past experimental findings in this field, the author subsequently provides a full and detailed description of a neutrino detector, from simulation aspects to detection principles, as well as the data analysis procedure used to extract the oscillation parameters. The main results in this book are 1) an improvement on the mixing angle, θ_{13} , uncertainty by combining two data-sets from neutrino event selection: neutron capture on gadolinium and on hydrogen; and 2) the first measurement of the

effective squared mass difference by combining the current reactor neutrino experimental data from Daya Bay, Double Chooz and RENO and taking advantage of their different reactor-to-detector distances. The author explains how these methods of combining data can be used to estimate these two values. Each method results in the best possible sensitivity for the oscillation parameters with regard to reactor neutrinos. They can be used as a standard method on the latest data releases from the current experiments.
