

FPGA training course

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Goal of Study

The students will learn basic of Field-Programmable Gate Array (FPGA) and Hardware Description Language (HDL) and obtain the methods to develop FPGA circuits using Xilinx Vivado. After this course, the students can start to develop FPGA circuits.

Contents

Field-Programmable Gate Array (FPGA) is one of key components for digital signal processing in the experiments of particle and nuclear physics. For the development of FPGA circuits, knowledge of digital circuits and implementation methods to FPGA is required. This course focus to introduce the latter experience.

In this course, we will use Xilinx Artix-7 FPGA with Vivado. The students are expected to install Vivado on their computers before the course. We do not recommend to use virtual machine.



FPGA training course (2016)



FPGA training course (2016)

Textbook and References

[1] Textbook: http://openit.kek.jp/training/2016/fpga/docs/OpenIt_FTC_preparation.pdf

[2] Reference: http://openit.kek.jp/training/2016/fpga/docs/OFTC_ref_note.pdf

The latest version will be announced.

Progress Schedule

- ◇ Day 1
 - Lecture on digital circuit
 - Lecture on combinational circuit
- ◇ Day 2
 - Lecture on FPGA
 - Lecture on sequential circuit
- ◇ Day 3
 - Exercises

Other Details

Course Period	Nov 2019
Place	Research Center for Neutrino Science Annex, 224
Number of Students	Max 20
Evaluation method	The evaluation method will based on report (100 %).

In Addition

KEK Open-It is the co-host of this course. This course is also open for external students, technical staff, postdocs, and so on. Language used in this course is only Japanese.