



The Abdus Salam
International Centre for Theoretical Physics



310/1780-7

**ICTP-INFN Advanced Training Course on
FPGA and VHDL for Hardware Simulation and Synthesis
27 November - 22 December 2006**

FPGA & VHDL

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These lecture notes are intended only for distribution to participants



FPGA Design & VHDL for Hardware Simulation & Synthesis



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November-December 2006



Course Overview



To learn...

- State-of-the-art design methodologies of Programmable Logic Devices (PLDs)
- The VHDL subset used for FPGA synthesis
- Actel's Flash FPGA technology
- Actel's Libero design tools
- EDA software snapshots
- About future technology and design challenges
- Using the Actel starter kit with Flash A3P250



- Introduction to FPGA
- Synthesis I – Introduction
- Synthesis II - Introduction to VHDL
- Synthesis III - Advanced VHDL
- Design verification – timing & power concepts
- Programmable logic & FPGA architectures
- Actel A3P/E Flash FPGA architecture
- System-On-Chip Concepts
- DEMO Fusion



- Libero IDE overview
- Design entry
- Functional Simulation
- Synthesis
- Layout
- Post-Layout Simulation & Programming

