



# WHAT THIS “COURSE” IS AND WHAT IT IS NOT

ANDY ROSE, IMPERIAL COLLEGE LONDON

# WHAT THIS COURSE IS

- This course is an introduction into how to go from bare FPGA silicon to an FPGA capable of being used in scientific applications in the
  - Quickest
  - Most maintainable
  - Most validated/validatable way
- Everything discussed was developed for the MP7 (& successors) & Serenity boards, but apply equally to any FPGA targeting high-throughput data processing

# WHAT THIS COURSE IS

- This course is an introduction into how to go from bare FPGA silicon to an FPGA capable of being used in scientific applications in the
  - Quickest
  - Most maintainable
  - Most validated/validatable way
- Everything discussed was developed for the MP7 (& successors) & Serenity boards, but apply equally to any FPGA targeting high-throughput data processing
- As discussed with Imran

# WHAT THIS COURSE IS NOT

- This course is not a course on how to program an FPGA
- Specifically, it is not
  - An introduction to VHDL
  - A course on optimizing VHDL (which depends on the problem you are trying to solve)
  - A course on or advocating HLS
- That will have to wait for another time

# WHAT ARE WE GOING TO DO

- We have three PCs

# WHAT ARE WE GOING TO DO

- We have three PCs
- Each set up with an internal Xilinx KCU105 development board
  - Because you can't really claim your tools are general-purpose if they only work on your hardware

# WHAT ARE WE GOING TO DO

- We have three PCs
- Each set up with an internal Xilinx KCU105 development board
  - Because you can't really claim your tools are general-purpose if they only work on your hardware
- Each PC also has, preinstalled,
  - Xilinx Vivado
  - Mentor/Siemens Modelsim
  - The UK-CMS tools

# WHAT ARE WE GOING TO DO

- We have three PCs
- Each set up with an internal Xilinx KCU105 development board
  - Because you can't really claim your tools are general-purpose if they only work on your hardware
- Each PC also has, preinstalled,
  - Xilinx Vivado
  - Mentor/Siemens Modelsim
  - The UK-CMS tools
- We will see how quickly we can go from bare FPGA to working system