

Introduction to FPGA computation and architecture

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On the one hand, an FPGA is a multiprocessor on a chip with up to several million elementary processors and a cumulative internal bandwidth of several Tbit/s. On the other hand, these are binary processors, and their frequency is far below what you get in a conventional CPU. Worse, compiling a program on such a chip may take several days.

All things considered, are FPGAs any good at scientific computing? The answer, of course, is “it depends”, and this talk will attempt to refine this statement.

After a perfectly balanced presentation of FPGA architectures and programming models, it will provide a serenely partial and biased review of FPGA success stories in scientific computing.

Orateur: Prof. DE DINECHIN, Florent (INSA Lyon)