



Contribution ID: 40

Type: **not specified**

## Exploring the Programming Models for the LUMI Supercomputer

*Wednesday, 22 September 2021 16:40 (20 minutes)*

The EuroHPC organization is procuring many supercomputers for various consortiums across Europe. One of them is the LUMI supercomputer and the main performance is provided by AMD GPUs. A user with no knowledge of programming on GPUs or not familiar with AMD GPUs, has to make some decisions among which programming model to use depending on many factors.

In this presentation we describe a short introduction on porting applications to AMD GPUs and we discuss various programming models for porting codes, such as HIP, OpenMP Offloading, hipSYCL, Kokkos, and Alpaka. We present a brief introduction and comparison to some of the programming models and also benchmarking with BabelStream and some other benchmarks on AMD MI100 GPU and mentioning how to tune some parameters based on the GPU hardware. Finally, we compare results between AMD MI100 and NVIDIA (V100 and A100).

**Primary author:** Dr MARKOMANOLIS, George (CSC - IT Center For Science Ltd)

**Presenter:** Dr MARKOMANOLIS, George (CSC - IT Center For Science Ltd)

**Session Classification:** Session 6

**Track Classification:** 19th Workshop on high performance computing in meteorology