Université de Pau et des Pays de l'Adour
Département de Mathématiques
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M2-BigData : GPGPU
Chapter 13 – Exercice 2

Objectives

Parallelize a matrix-matrix multiplication algorithm using OpenACC.

Instructions

From the given code (host sequential matrix multiplication) write an OpenACC version with explicit data management. Write 3 versions:

1. naive version with only `parallel` and `loop` directives. Make sure that you take into account all information given by the compiler
2. better version with enhanced description of the algorithm (`collapse` or `tile`) and appropriate description of the algorithm and association to OpenACC levels of parallelism.

Questions

1. Explain all your choices of optimisation in version 2.
2. Compare all your versions of matrix multiplication you wrote so far : CUDA versions from chapter 4 and OpenACC from this exercise. What is the best version? EXPLAIN