MYCHP203 — TOP : Lab 2

Gabriel Dos Santos

gabriel.dossantos@cea.fr

gabriel.dos-santos@uvsq.fr

Hugo Taboada

hugo.taboada@cea.fr

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Spatial and temporal locality, data structure packing, Structure of Arrays vs Arrays of Structures & false sharing.

I Cache blocking

1. Profile the `cross-stencil` code using Linux Perf. Specifically, look at cache misses in the L1, L2 and L3 (LLC) caches.

2. Implement a cache-blocked version of the `stencil()` function to improve the spatial and temporal locality of the loop.

3. Assert that your implementation computes the correct result.

4. Tune the block size to maximize the performance of your cache-blocked version. Use Perf to assert the improvements in cache reuse.

II Memory consumption

III AoS vs SoA

IV False sharing