

Introduction

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CERN

2022-04-29



Highlights merged I

traccc

- **Another CUDA implementation of connected component labeling** ([PR#19](#))
by [@stephenswat](#), merged on 2022-04-05
- **Add measurement creation implementation in SYCL** ([PR#169](#))
by [@konradkusiak97](#), merged on 2022-04-15
- **Add Component connection in SYCL** ([PR#179](#))
by [@konradkusiak97](#), merged on 2022-04-27

vecmem

- **Improve semantics of unique pointers to allow non-trivial types** ([PR#172](#))
by [@stephenswat](#), merged on 2022-04-12

Highlights merged II

detray

- **Add covariance transport in RK stepper** ([PR#239](#))
by [@beomki-yeo](#), merged on 2022-04-19
- **Add operations between matrix and vector** ([PR#61](#))
by [@beomki-yeo](#), merged on 2022-04-15

GPU CI

- I started looking at this (for vecmem first)



- CUDA library job seems to work
- SYCL (using ubuntu1804_cuda_oneapi) unfortunately not
- This works locally, however in CI:

```
terminate called after throwing an instance of 'cl::sycl::runtime_error'  
what(): No device of requested type available. -1 (CL_DEVICE_NOT_FOUND)
```

- Tried SYCL_DEVICE_FILTER=*:gpu and cuda, same result
- Investigating...

Contributions today I

- **Update on GPU Magnetic Field**
by Stephen Nicholas Swatman
- **Roundtable**

acts-project/traccc
Merged PRs

acts-project/traccc: PRs merged since 2022-04-01 |

- **Return internal spacepoint members by value** ([PR#157](#))
by [@stephenswat](#), merged on 2022-04-05
- **VecMem Update, main branch (2022.04.05.)** ([PR#161](#))
by [@krasznaa](#), merged on 2022-04-05
- **Command Line Argument Parsing Fixes, main branch (2022.04.05.)** ([PR#162](#))
by [@krasznaa](#), merged on 2022-04-05
- **Remove variance from spacepoint EDM** ([PR#156](#))
by [@stephenswat](#), merged on 2022-04-05
- **Another CUDA implementation of connected component labeling** ([PR#19](#))
by [@stephenswat](#), merged on 2022-04-05
- **Use buffer instead of container in CUDA seeding** ([PR#160](#))
by [@beomki-yeo](#), merged on 2022-04-06

acts-project/traccc: PRs merged since 2022-04-01 II

- **Changed seed matching comparison (PR#164)**
by @konradkusiak97, merged on 2022-04-07
- **Use reserve() for size vectors in CUDA seeding (PR#166)**
by @beomki-yeo, merged on 2022-04-07
- **Container Re-design, main branch (2022.04.06.) (PR#165)**
by @krasznaa, merged on 2022-04-08
- **Container Improvements, main branch (2022.04.08.) (PR#168)**
by @krasznaa, merged on 2022-04-08
- **VecMem 0.13.0 Update, main branch (2022.04.12.) (PR#171)**
by @krasznaa, merged on 2022-04-12
- **CUDA / Clang Compatibility, main branch (2022.04.12.) (PR#172)**
by @krasznaa, merged on 2022-04-12

acts-project/traccc: PRs merged since 2022-04-01 III

- **CUDA/SYCL Code Sharing, main branch (2022.04.08.)** ([PR#170](#))
by [@krasznaa](#), merged on 2022-04-14
- **Add measurement creation implementation in SYCL** ([PR#169](#))
by [@konradkusiak97](#), merged on 2022-04-15
- **General Jagged Vector Prefix Sums, main branch (2022.04.15.)** ([PR#175](#))
by [@krasznaa](#), merged on 2022-04-15
- **Rewrite seed collection comparator** ([PR#173](#))
by [@beomki-yeo](#), merged on 2022-04-19
- **Decouple spacepoint formation from clusterization algorithm** ([PR#174](#))
by [@beomki-yeo](#), merged on 2022-04-21
- **Add Component connection in SYCL** ([PR#179](#))
by [@konradkusiak97](#), merged on 2022-04-27

acts-project/traccc: PRs merged since 2022-04-01 IV

- **Detray Update, main branch (2022.04.26.)** ([PR#178](#))
by [@krasznaa](#), merged on 2022-04-27

acts-project/traccc
Open PRs

acts-project/traccc: Open PRs I

- **Add binary file I/O** ([PR#177](#))
by [@beomki-yeo](#), updated on 2022-04-25
- **Move 'event_map.hpp' into 'traccc/io' directory** ([PR#176](#))
by [@beomki-yeo](#), updated on 2022-04-25
- **Reorganize seeding structure** ([PR#167](#))
by [@beomki-yeo](#), updated on 2022-04-14
- **Implement and test a CUDA version of the module map** ([PR#154](#))
by [@stephenswat](#), updated on 2022-04-13
- **Implement CUDA spacepoint formation with flat EDM** ([PR#158](#))
by [@stephenswat](#), updated on 2022-04-01

acts-project/vecmem
Merged PRs

acts-project/vecmem: PRs merged since 2022-04-01 |

- **Correctly import cassert.h in unique obj deleter (PR#171)**
by @stephenswat, merged on 2022-04-11
- **Jagged Vector Buffer Bug/Fix, main branch (2022.04.11.) (PR#173)**
by @krasznaa, merged on 2022-04-12
- **Improve semantics of unique pointers to allow non-trivial types (PR#172)**
by @stephenswat, merged on 2022-04-12
- **CUDA Device Name Printout, main branch (2022.04.12.) (PR#174)**
by @krasznaa, merged on 2022-04-12

acts-project/vecmem
Open PRs

acts-project/vecmem: Open PRs I

- **add gitlab ci file** ([PR#176](#))
by [@paulgessinger](#), updated on 2022-04-29
- **[WIP] Add cms caching cuda allocator** ([PR#79](#))
by [@cgleggett](#), updated on 2021-04-28

acts-project/detray
Merged PRs

acts-project/detray: PRs merged since 2022-04-01 |

- **fix: b field access** (PR#238)
by @niermann999, merged on 2022-04-07
- **Rewrite CI with LLVM** (PR#233)
by @beomki-yeo, merged on 2022-04-08
- **feat: add actor list** (PR#234)
by @niermann999, merged on 2022-04-11
- **Add a constructor for grid buffer** (PR#241)
by @beomki-yeo, merged on 2022-04-12
- **feat: add pathlimit aborter** (PR#236)
by @niermann999, merged on 2022-04-18
- **Fix bugs in propagator cuda test** (PR#245)
by @beomki-yeo, merged on 2022-04-19

acts-project/detray: PRs merged since 2022-04-01 II

- **Add covariance transport in RK stepper** ([PR#239](#))
by [@beomki-yeo](#), merged on 2022-04-19
- **Feat: navigation policies** ([PR#242](#))
by [@niermann999](#), merged on 2022-04-25
- **Grid2 Const Conversion, main branch (2022.04.27.)** ([PR#252](#))
by [@krasznaa](#), merged on 2022-04-27
- **Grid2 Const Correctness, main branch (2022.04.28.)** ([PR#253](#))
by [@krasznaa](#), merged on 2022-04-29

acts-project/detray
Open PRs

acts-project/detray: Open PRs I

- **Add jacobian and covariance engine** ([PR#251](#))
by [@beomki-yeo](#), updated on 2022-04-29
- **feat: add example of chained actors** ([PR#248](#))
by [@niermann999](#), updated on 2022-04-27
- **Add scalar template parameter in magnetic field** ([PR#247](#))
by [@beomki-yeo](#), updated on 2022-04-26
- **exp: runge kutta specific navigation policy** ([PR#249](#))
by [@niermann999](#), updated on 2022-04-25
- **add vecpar example** ([PR#235](#))
by [@georgi-mania](#), updated on 2022-04-19
- **feat: make surface finders callable from navigator** ([PR#208](#))
by [@niermann999](#), updated on 2022-04-12

acts-project/detray: Open PRs II

- **Reduce CI workflows** ([PR#244](#))
by [@beomki-yeo](#), updated on 2022-04-11
- **feat: adding nlohman library** ([PR#213](#))
by [@asalzburger](#), updated on 2022-04-08

acts-project/algebra-plugins
Merged PRs

acts-project/algebra-plugins: PRs merged since 2022-04-01 |

- **Add 'size_type' to plugin namespace (PR#59)**
by [@beomki-yeo](#), merged on 2022-04-01
- **Add table to README.md (PR#60)**
by [@paulgessinger](#), merged on 2022-04-05
- **Add operations between matrix and vector (PR#61)**
by [@beomki-yeo](#), merged on 2022-04-15
- **Remove commented lines (PR#62)**
by [@beomki-yeo](#), merged on 2022-04-26
- **Use Vc array for vector method (PR#63)**
by [@beomki-yeo](#), merged on 2022-04-28
- **Stability improvement (PR#64)**
by [@beomki-yeo](#), merged on 2022-04-29

acts-project/algebra-plugins: PRs merged since 2022-04-01 II

- **Add dot product between vector expression in smatrix (PR#65)**
by [@beomki-yeo](#), merged on 2022-04-29