

Acts Parallelization Meeting

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April 21, 2023











Today's Contributions

- **Cell-wise parallelisation of the clusterisation algorithm in traccc**
by Justus Rudolph







acts-project/traccc: PRs merged between 2023-03-24 and 2023-04-21 |

-  **Fix comment in device triplet (PR#365)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-24
-  **CMake Export Fix, main branch (2023.03.24.) (PR#367)**
by @krasznaa, no assignee, merged on 2023-03-24
-  **Change CPU clustering to use flat (alt) edm (PR#361)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-27
-  **Update to detrax v28 (PR#358)**
by @beomki-yeo, no assignee, merged on 2023-03-27
-  **Change alt_cell to not depend on cell. Remove deprecated cell. (PR#368)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-28
-  **Change SYCL chain to use async memory copies (PR#371)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-28
-  **Remove deprecated seed type. Rename alt_seed to seed. Rename alt_cell to cell. (PR#372)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-28















acts-project/traccc: PRs merged between 2023-03-24 and 2023-04-21 II

-  **Fix the unit of phi range (PR#374)**
by @beomki-yeo, no assignee, merged on 2023-03-28
-  **Fix: Sycl algorithms wait for asynchronous operations. (PR#373)**
by @guilhermeAlmeida1, no assignee, merged on 2023-03-29
-  **Minor fixes (PR#379)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-13
-  **Update vecmem and detray versions (PR#378)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-13
-  **Update README.md (PR#376)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-13
-  **Update to data v3 (PR#381)**
by @beomki-yeo, no assignee, merged on 2023-04-14
-  **Add quality reporting for seeds of arbitrary length (PR#369)**
by @stephenswat, no assignee, merged on 2023-04-17
-  **Use reserve for input states (PR#383)**
by @beomki-yeo, no assignee, merged on 2023-04-19















acts-project/traccc: PRs merged between 2023-03-24 and 2023-04-21 III

-  **Add default destructors to virtual classes (PR#385)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-20
-  **Implement near-transparent layout-swappable arrays (PR#348)**
by @stephenswat, no assignee, merged on 2023-04-20
-  **Reduce the memory usage of array wrapper tests (PR#387)**
by @stephenswat, no assignee, merged on 2023-04-20
-  **ci: Add basic GPU CI (PR#237)**
by @paulgessinger, no assignee, merged on 2023-04-20
-  **Remove git-lfs from actions. Update to checkout@v3 (PR#389)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-21
-  **Change CCL kernel to common code (PR#377)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-21









acts-project/traccc: Open PRs I

-  **Add support for profiling using compiler function instrumentation (PR#366)**
by @Xola101,  **no assignee**, updated on 2023-04-21
-  **Ensure synchronisation with async copies (PR#380)**
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-04-21
-  **feat: Test cuda full chain against cpu (PR#388)**
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-04-21
-  **Add ability to import CMake target for covfie (PR#363)**
by @stephenswat,  **no assignee**, updated on 2023-04-21
-  **Implement CUDA block- and warp-wide odd-even sort (PR#347)**
by @stephenswat,  **no assignee**, updated on 2023-04-20
-  **Check results in throughput measurements (PR#386)**
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-04-20
-  **Improve and fix KF (PR#382)**
by @beomki-yeo,  **no assignee**, updated on 2023-04-16


acts-project/traccc: Open PRs II

-  **Add a very simple seeding efficiency plotter (PR#370)**
by @stephenswat,  **no assignee**, updated on 2023-04-11
-  **Add scripts for plotting throughput measurements (PR#375)**
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-04-11
-  **Add CUDA Track Finding Algorithm based on CKF (PR#352)**
by @beomki-yeo,  **no assignee**, updated on 2023-03-31
-  **Add Spack development environment specification (PR#364)**
by @stephenswat,  **no assignee**, updated on 2023-03-28
-  **Alternative CUDA implementation of seed finding (PR#230)**
by @stephenswat,  **no assignee**, updated on 2023-03-26
-  **Throughput Measurement Scripting, main branch (2023.03.11.) (PR#344)**
by @krasznaa,  **no assignee**, updated on 2023-03-17
-  **Implement and test a CUDA version of the module map (PR#154)**
by @stephenswat,  **no assignee**, updated on 2023-03-17









acts-project/traccc: Open PRs III

-  **MPS benchmarking scripts and test workflow (PR#244)**
by @Chamodya-ka,  **no assignee**, updated on 2023-01-25
-  **added mps script tests (PR#255)**
by @Chamodya-ka,  **no assignee**, updated on 2023-01-25
-  **Add infrastructure for CUDA graph algorithms (PR#307)**
by @stephenswat,  **no assignee**, updated on 2023-01-25
-  **Implement CUDA spacepoint formation with flat EDM (PR#158)**
by @stephenswat,  **no assignee**, updated on 2022-04-01







acts-project/detray: PRs merged between 2023-03-24 and 2023-04-21 |

-  **CMake Export Fix, main branch (2023.03.24.) (PR#419)**
by @krasznaa, no assignee, merged on 2023-03-24
-  **Algebra Plugins Update, main branch (2023.03.24.) (PR#421)**
by @krasznaa, no assignee, merged on 2023-03-24
-  **Refer to 'nlohmann_json' target by namespace (PR#420)**
by @stephenswat, no assignee, merged on 2023-03-24
-  **feat: Add throughput to propagation benchmarks (PR#413)**
by @stephenswat, no assignee, merged on 2023-03-25
-  **Add comments to axis_rotation (PR#424)**
by @beomki-yeo, no assignee, merged on 2023-03-30
-  **ref: surface barcode (PR#423)**
by @niermann999, no assignee, merged on 2023-03-30
-  **Correct path of helix intersector (PR#422)**
by @beomki-yeo, no assignee, merged on 2023-03-31









acts-project/detray: PRs merged between 2023-03-24 and 2023-04-21 II

-  **Algebra Plugins Update, main branch (2023.04.03.) (PR#429)**
by @krasznaa, no assignee, merged on 2023-04-03
-  **Add unit tests for matrix helper (PR#427)**
by @beomki-yeo, no assignee, merged on 2023-04-03
-  **Add make_curvilinear_unit_vector function and fix some bugs (PR#426)**
by @beomki-yeo, no assignee, merged on 2023-04-03
-  **Algebra Configuration Update, main branch (2023.04.03.) (PR#430)**
by @krasznaa, no assignee, merged on 2023-04-03
-  **CI Benchmark Fix, main branch (2023.03.04.) (PR#432)**
by @krasznaa, no assignee, merged on 2023-04-03
-  **detray::core Refactor, main branch (2023.04.03.) (PR#431)**
by @krasznaa, no assignee, merged on 2023-04-04
-  **Header Test Code Streamline, main branch (2023.04.04.) (PR#433)**
by @krasznaa, no assignee, merged on 2023-04-04
-  **detray::io Refactor, main branch (2023.04.04.) (PR#434)**
by @krasznaa, no assignee, merged on 2023-04-05















acts-project/detray: PRs merged between 2023-03-24 and 2023-04-21 III

-  **detray::utils Refactor, main branch (2023.04.05.) (PR#436)**
by @krasznaa, no assignee, merged on 2023-04-05
-  **feat: json geometry writer (PR#428)**
by @niermann999, no assignee, merged on 2023-04-11
-  **Refactor the Material Interaction and Scattering Tests (PR#435)**
by @beomki-yeo, no assignee, merged on 2023-04-11
-  **Update vecmem to version 0.24.0 (PR#442)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-12
-  **Update Project Version to v0.30.0 (PR#443)**
by @beomki-yeo, no assignee, merged on 2023-04-13
-  **Fix 'find_package' syntax for actsvg (PR#440)**
by @stephenswat, no assignee, merged on 2023-04-13
-  **feat: Implement 'detray::tuple' (PR#415)**
by @stephenswat, no assignee, merged on 2023-04-14
-  **Improve energy loss (PR#444)**
by @beomki-yeo, no assignee, merged on 2023-04-14











acts-project/detray: PRs merged between 2023-03-24 and 2023-04-21 IV

-  **Move energy loss test to a dedicated file (PR#445)**
by [@beomki-yeo](#), no assignee, merged on 2023-04-14
-  **ref: Reduce size of navigator memory alloc (PR#441)**
by [@niermann999](#), no assignee, merged on 2023-04-14
-  **ref: use barcode in event writer (PR#448)**
by [@niermann999](#), no assignee, merged on 2023-04-17
-  **Add a path correction term from the direction variation (PR#425)**
by [@beomki-yeo](#), no assignee, merged on 2023-04-18
-  **Remove density effect data (PR#450)**
by [@beomki-yeo](#), no assignee, merged on 2023-04-18
-  **feat: portal cylinder intersector (PR#411)**
by [@niermann999](#), no assignee, merged on 2023-04-19
-  **ref: address performance changes after portal cylinder was added (PR#449)**
by [@niermann999](#), no assignee, merged on 2023-04-21
-  **Refactor the path correction and support line coordinate as well (PR#452)**
by [@beomki-yeo](#), no assignee, merged on 2023-04-21






acts-project/detray: Open PRs I

-  Refactor the operator of pointwise material interactor (PR#453)
by @beomki-yeo,  no assignee, updated on 2023-04-21
-  ref: implemented bit encoded typed index (PR#454)
by @niermann999,  no assignee, updated on 2023-04-21
-  feat: json writer for simple material description (PR#438)
by @niermann999,  no assignee, updated on 2023-04-21
-  feat: material builders (PR#364)
by @niermann999,  no assignee, updated on 2023-04-19
-  Add support for C++20 concepts (PR#447)
by @stephenswat,  no assignee, updated on 2023-04-14
-  Refactor CPU Benchmarks, main branch (2023.04.05.) (PR#437)
by @krasznaa,  no assignee, updated on 2023-04-11
-  feat: Add cpu propagation benchmarks that use openMP (PR#404)
by @niermann999,  no assignee, updated on 2023-04-10



acts-project/detray: Open PRs II

-  **feat: stepper print inspector (PR#402)**
by @niermann999,  **no assignee**, updated on 2023-04-10
-  **feat: Enable reading of a solenoid field map in the toy geometry (PR#399)**
by @niermann999,  **no assignee**, updated on 2023-03-09
-  **ref: Add new stepper policy and benchmark it (PR#327)**
by @niermann999,  **no assignee**, updated on 2022-11-10
-  **Volume radiation length (PR#328)**
by @beomki-yeo,  **no assignee**, updated on 2022-10-26
-  **add vecpar example (PR#235)**
by @georgi-mania,  **no assignee**, updated on 2022-07-13






acts-project/vecmem: PRs merged between 2023-03-24 and 2023-04-21 |

-  **CI CMake Fix, main branch (2023.03.27.) (PR#226)**
by @krasznaa, no assignee, merged on 2023-03-27
-  **Conversion Warnings, main branch (2023.03.27.) (PR#227)**
by @krasznaa, no assignee, merged on 2023-03-27
-  **(Resizable) Vector Buffer Update, main branch (2023.03.17.) (PR#224)**
by @krasznaa, no assignee, merged on 2023-03-28
-  **Add target option for atomic ref (PR#228)**
by @guilhermeAlmeida1, no assignee, merged on 2023-04-21
-  **Project Version Header, main branch (2023.04.11.) (PR#229)**
by @krasznaa, no assignee, merged on 2023-04-21





acts-project/vecmem: Open PRs |

-  [WIP] Add cms caching cuda allocator (PR#79)
by @cglegett,  no assignee, updated on 2021-04-28

acts-project/algebra-plugins: PRs merged between 2023-03-24 and 2023-04-21 |

-  **CMake Export Fix, main branch (2023.03.24.) (PR#96)**
by @krasznaa, no assignee, merged on 2023-03-24
-  **VecMem Update, main branch (2023.03.29.) (PR#98)**
by @krasznaa, no assignee, merged on 2023-03-29
-  **Benchmarks Fix, main branch (2023.03.29.) (PR#99)**
by @krasznaa, no assignee, merged on 2023-03-29
-  **Public Header Tests, main branch (2023.03.29.) (PR#100)**
by @krasznaa, no assignee, merged on 2023-03-29
-  **CMake Updates, main branch (2023.03.29.) (PR#101)**
by @krasznaa, no assignee, merged on 2023-03-30

acts-project/algebra-plugins: Open PRs I

-  **feat: SoA layout for vector (PR#95)**
by @niermann999,  **no assignee**, updated on 2023-04-03
-  **feat: add a Vc SoA implementation for transform3 (PR#97)**
by @niermann999,  **no assignee**, updated on 2023-03-29