

# Acts Parallelization Meeting

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# Today's Contributions

- **Vectorizing matrix operations**  
by Beomki Yeo















## acts-project/traccc: PRs merged between 2024-04-06 and 2024-04-19 |

-  **Update to detray v0.63.0 (PR#531)**  
by @niermann999, no assignee, merged on 2024-04-09
-  **Command Line Options Rewrite, main branch (2024.04.09.) (PR#533)**  
by @krasznaa, no assignee, merged on 2024-04-10
-  **ODD Full Chain Reconstruction, main branch (2024.04.09.) (PR#534)**  
by @krasznaa, no assignee, merged on 2024-04-11
-  **Skip a CKF when no measurement is found on a surface (PR#529)**  
by @shimasnd, no assignee, merged on 2024-04-11
-  **Fix ambiguity resolution algorithm: add unique measurement\_id (PR#536)**  
by @SylvainJoubé, no assignee, merged on 2024-04-14
-  **Double Precision Build Fix, main branch (2024.04.15.) (PR#542)**  
by @krasznaa, no assignee, merged on 2024-04-15
-  **Host Clusterization Reorganization, main branch (2024.04.16.) (PR#543)**  
by @krasznaa, no assignee, merged on 2024-04-16





## acts-project/traccc: PRs merged between 2024-04-06 and 2024-04-19 II

-  **Update Alpaka version for improved HIP support + HIP updates (PR#519)**  
by [@StewMH](#), no assignee, merged on 2024-04-17
-  **Move to ACTS v27 and adapt test code (PR#530)**  
by [@StewMH](#), no assignee, merged on 2024-04-17
-  **Improved error reporting for greedy solver (PR#539)**  
by [@SylvainJoubé](#), no assignee, merged on 2024-04-19
-  **Device Clusterization Reorganization, main branch (2024.04.17.) (PR#545)**  
by [@krasznaa](#), no assignee, merged on 2024-04-19















## acts-project/traccc: Open PRs I

-  **Cell Reading Rewrite, main branch (2024.04.19.) (PR#547)**  
by @krasznaa,  **no assignee**, updated on 2024-04-19
-  **Deduplicate cells in CSV input (PR#546)**  
by @stephenswat,  **no assignee**, updated on 2024-04-19
-  **Add timers to seq\_example (PR#541)**  
by @SylvainJoubé,  **no assignee**, updated on 2024-04-19
-  **CUDA CI Update, main branch (2024.04.17.) (PR#544)**  
by @krasznaa,  **no assignee**, updated on 2024-04-17
-  **Add track tree writer (PR#503)**  
by @beomki-yeo,  **no assignee**, updated on 2024-04-15
-  **Specific documentation on ROOT for traccc (PR#535)**  
by @SylvainJoubé,  **no assignee**, updated on 2024-04-11
-  **Update to new detray geometry reading for alpaka seeding (PR#514)**  
by @StewMH,  **no assignee**, updated on 2024-02-07















## acts-project/traccc: Open PRs II

-  **Add check format local (PR#490)**  
by @beomki-yeo,  **no assignee**, updated on 2023-11-20
-  **Add functions to calculate pvalue (PR#405)**  
by @beomki-yeo,  **no assignee**, updated on 2023-10-26
-  **Sort track parameters before CKF (PR#473)**  
by @beomki-yeo,  **no assignee**, updated on 2023-10-21
-  **feat: implement digitization configurator for detrays geometries (PR#465)**  
by @niermann999,  **no assignee**, updated on 2023-10-20
-  **feat: Test cuda full chain against cpu (PR#388)**  
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-10-10
-  **SYCL test in gitlab CI (PR#461)**  
by @beomki-yeo,  **no assignee**, updated on 2023-10-06
-  **Asynchronous operation for Track Finding and Fitting (PR#462)**  
by @beomki-yeo,  **no assignee**, updated on 2023-09-30

## acts-project/traccc: Open PRs III





-  **Add SYCL CKF (PR#460)**  
by @beomki-yeo,  **no assignee**, updated on 2023-09-29
-  **Add oneDPL for SYCL (PR#442)**  
by @beomki-yeo,  **no assignee**, updated on 2023-09-29
-  **Improvements to the CCL test data generator (PR#457)**  
by @stephenswat,  **no assignee**, updated on 2023-09-12
-  **Update acts version and seeding test (PR#422)**  
by @beomki-yeo,  **no assignee**, updated on 2023-07-20
-  **CUDA CKF with single kernel (PR#408)**  
by @beomki-yeo,  **no assignee**, updated on 2023-07-17
-  **Add scripts for plotting throughput measurements (PR#375)**  
by @guilhermeAlmeida1,  **no assignee**, updated on 2023-06-16
-  **Add a very simple seeding efficiency plotter (PR#370)**  
by @stephenswat,  **no assignee**, updated on 2023-06-05

## acts-project/traccc: Open PRs IV




-  **Implement seed finding Thunderdome in CUDA (PR#410)**  
by @stephenswat,  **no assignee**, updated on 2023-05-27
-  **Add Spack development environment specification (PR#364)**  
by @stephenswat,  **no assignee**, updated on 2023-05-11
-  **Implement CUDA block- and warp-wide odd-even sort (PR#347)**  
by @stephenswat,  **no assignee**, updated on 2023-04-20
-  **Alternative CUDA implementation of seed finding (PR#230)**  
by @stephenswat,  **no assignee**, updated on 2023-03-26
-  **Implement and test a CUDA version of the module map (PR#154)**  
by @stephenswat,  **no assignee**, updated on 2023-03-17
-  **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















## acts-project/traccc: Open PRs V

-  **Add infrastructure for CUDA graph algorithms (PR#307)**  
by @stephswat,  **no assignee**, updated on 2023-01-25
-  **Implement CUDA spacepoint formation with flat EDM (PR#158)**  
by @stephswat,  **no assignee**, updated on 2022-04-01











## acts-project/detray: PRs merged between 2024-04-06 and 2024-04-19 |

-  **ref: cleanup algebra plugin templates - part 1 (PR#711)**  
by [@niermann999](#), no assignee, merged on 2024-04-08
-  **Skip detector check in benchmark (PR#714)**  
by [@beomki-yeo](#), no assignee, merged on 2024-04-12
-  **CMake Updates, main branch (2024.04.12.) (PR#715)**  
by [@krasznaa](#), no assignee, merged on 2024-04-15


## acts-project/detray: Open PRs I

-  **feat: Add cpu propagation benchmarks that use openMP (PR#404)**  
by @niermann999,  **no assignee**, updated on 2024-04-16
-  **ref: Add new stepper policy and benchmark it (PR#327)**  
by @niermann999,  **no assignee**, updated on 2024-04-16
-  **Allow vectorization in detray benchmark (PR#717)**  
by @beomki-yeo,  **no assignee**, updated on 2024-04-16
-  **ref: Reuse ray/helix scan results and switch to random track generator (PR#713)**  
by @niermann999,  **no assignee**, updated on 2024-04-14
-  **feat: Add simd intersector and benchmark them (PR#712)**  
by @niermann999,  **no assignee**, updated on 2024-04-14
-  **feat: Move material maps generation to factory, add material maps to new toy detector and remove old toy detector (PR#709)**  
by @niermann999,  **no assignee**, updated on 2024-03-22



## acts-project/detray: Open PRs II

-  **feat: Add material map display to svgtools (PR#692)**  
by @niermann999,  **no assignee**, updated on 2024-03-14
-  **Multiple scattering in the volume material (PR#677)**  
by @beomki-yeo,  **no assignee**, updated on 2024-02-18
-  **exp: add SoA intersector (PR#555)**  
by @niermann999,  **no assignee**, updated on 2023-09-08
-  **add vecpar example (PR#235)**  
by @georgi-mania,  **no assignee**, updated on 2023-05-15
-  **Add support for C++20 concepts (PR#447)**  
by @stephenswat,  **no assignee**, updated on 2023-04-14




## acts-project/vecmem: PRs merged between 2024-04-06 and 2024-04-19 |

-  **Xcode Link Option Update, main branch (2024.03.24.) (PR#273)**  
by [@krasznaa](#), no assignee, merged on 2024-04-11







## acts-project/vecmem: Open PRs |

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

## acts-project/algebra-plugins: PRs merged between 2024-04-06 and 2024-04-19 |

-  **(Better) VSCode Build Support, main branch (2024.04.11.) (PR#113)**  
by [@krasznaa](#), no assignee, merged on 2024-04-12
-  **oneAPI 2024.1.0 Support, main branch (2024.04.11.) (PR#115)**  
by [@krasznaa](#), no assignee, merged on 2024-04-12
-  **VecMem (and CMake) Update, main branch (2024.04.11.) (PR#114)**  
by [@krasznaa](#), no assignee, merged on 2024-04-12
-  **feat: SoA layout for vector (PR#95)**  
by [@niermann999](#), no assignee, merged on 2024-04-12

## acts-project/algebra-plugins: Open PRs I

-  **Vectorize the cmath matrix operations (PR#116)**  
by @beomki-yeo,  **no assignee**, updated on 2024-04-16
-  **ref: Restore explicit vectorization in the Vc AoS plugin (PR#118)**  
by @niermann999,  **no assignee**, updated on 2024-04-16
-  **feat: add a Vc SoA implementation for transform3 (PR#97)**  
by @niermann999,  **no assignee**, updated on 2024-04-12



## acts-project/covfie: PRs merged between 2024-04-06 and 2024-04-19 |

-  **Stop MSVC whining about lossy conversions (PR#23)**  
by [@stephenswat](#), no assignee, merged on 2024-04-18

## acts-project/covfie: Open PRs I

-  Replace 'boost::filesystem' by 'std::filesystem' (PR#14)  
by @stephenswat,  **no assignee**, updated on 2023-10-12