


Pull request and issue summary for acts-project/acts

















June 4, 2024

Needs discussion I













- ▶  **TrackAtVertex trackWeight is not being written in IVF (#2149)**
by @andiwand

During my work on the vertexing I noticed that the 'trackWeight' of 'TrackAtVertex'
<https://github.com/acts-project/acts/blob/main/Core/include/Acts/Vertexing/TrackAtVertex.hpp#L69>
default of '1' is never being overwritten in the IVF. Not sure if this is intended but it seems very odd.

acts-project/acts: PRs merged between 2024-05-28 and 2024-06-04 |
















- ▶  **refactor: Remove target volume estimation from 'Navigator'** (#3217)
by @andiwand,  reviewed by @AJPfleger, merged on 2024-05-28
- ▶  **chore: naming of other navigation delegates** (#3199)
by @asalzburger,  reviewed by @dimitra97, merged on 2024-05-28
- ▶  **refactor: Add more comparison types for root files** (#3147)
by @CouthuresJeremy,  reviewed by @andiwand, merged on 2024-05-28
- ▶  **test: remove unused boost includes and namespaces** (#3229)
by @AJPfleger,  reviewed by @dimitra97, merged on 2024-05-28
- ▶  **feat: Manual 'Propagator' initialization and 'AnySurfaceReached' aborter** (#3208)
by @andiwand,  reviewed by @benjaminhuth, merged on 2024-05-30
- ▶  **test: refactor nested namespaces** (#3230)
by @AJPfleger,  reviewed by @dimitra97, merged on 2024-05-30
- ▶  **ci: Disable metric tracking for now** (#3239)
by @paulgessinger,  reviewed by @andiwand, merged on 2024-05-31
- ▶  **test: improve VerticesHelperOnHyperPlane** (#3228)
by @AJPfleger,  reviewed by @dimitra97, merged on 2024-05-31

acts-project/acts: PRs merged between 2024-05-28 and 2024-06-04 II

















- ▶  **fix: codecov coverage badge - correct branch (#3232)**
by @AJPfleger,  reviewed by @dimitra97, merged on 2024-05-31
- ▶  **feat: introduce delegate for the sourcelink creation and the measurement selection (#3198)**
by @goetzgaycken,  reviewed by @andiwand, merged on 2024-05-31
- ▶  **revert: Remove target volume estimation from 'Navigator' #3217 (#3241)**
by @andiwand,  reviewed by @AJPfleger, merged on 2024-05-31
- ▶  **refactor: add output format option in material_mapping.py (#3071)**
by @ShujieL,  reviewed by @andiwand, merged on 2024-06-01
- ▶  **fix: enable gx2f-only mode in physmon (#3243)**
by @AJPfleger,  reviewed by @benjaminhuth, merged on 2024-06-04
- ▶  **fix: correct first, then draw for SVG portals (#3244)**
by @asalzburger,  reviewed by @niermann999, merged on 2024-06-04

- ▶  **refactor: Use unique_ptr for GlueVolumeDescriptor (#3245)**
by @paulgessinger,  reviewed by @AJPfleger, updated on 2024-06-04
- ▶  **refactor: Do not allocate memory if the surface is connected with a detector el... (#3069)**
by @junggjo9,  comment by @andiwand, updated on 2024-06-03
- ▶  **fix: loading TGeo geometry from volumes with global transform != 1 (#3236)**
by @pbutti,  **no reviewer**, updated on 2024-06-03
- ▶  **Stale** **feat: Add per event timing (#3124)**
by @CouthuresJeremy,  comment by @andiwand, updated on 2024-06-01
- ▶  **refactor: Remove 'lastHierarchySurfaceReached' from 'Navigator' (#3237)**
by @andiwand,  **no reviewer**, updated on 2024-05-30
- ▶  **test: Add option to only build matching unittests (#3233)**
by @benjaminhuth,  comment by @andiwand, updated on 2024-05-29
- ▶  **refactor!: Remove 'CylinderBounds::inside3D' (#3204)**
by @andiwand,  reviewed by @AJPfleger, updated on 2024-05-28
- ▶  **refactor: Some internal GSF refactorings (#2697)**
by @benjaminhuth,  changes requested by @andiwand, updated on 2024-05-28






















acts-project/acts: Open PRs II

- ▶  **refactor!: Remove 'overstepLimit' from 'EigenStepper' (#3224)**
by @andiwand,  **no reviewer**, updated on 2024-05-25
- ▶  **refactor!: Rewrite 'BoundaryCheck' (#3170)**
by @andiwand,  comment by @benjaminhuth, updated on 2024-05-23
- ▶  **refactor: Use Core CKF extrapolation after inwards extension (#3195)**
by @andiwand,  **no reviewer**, updated on 2024-05-22
- ▶  **refactor!: Use track container in Core 'CKF' and pass track proxies to delegates (#3161)**
by @andiwand,  comment by @timadye, updated on 2024-05-22
- ▶  **feat: covfie plugin (#3117)**
by @fredevb, review requested, updated on 2024-05-22
- ▶  **refactor: change the definition of the rotation parameters (#2021)**
by @XiaocongAi,  reviewed by @paulgessinger, updated on 2024-05-22
- ▶  **refactor!: Seed filter container policy (#3136)**
by @CouthuresJeremy,  comment by @CouthuresJeremy, updated on 2024-05-17
- ▶  **feat: adding relative transformation + calculation of com function (#3005)**
by @LaraCalic,  comment by @AJPfleger, updated on 2024-05-17



















acts-project/acts: Open PRs III

- ▶  **feat: introduction obj simhit writer (#3180)**
by @asalzburger,  **no reviewer**, updated on 2024-05-16
- ▶  **feat: Misalignment shift and test check that only selected modules are shifted (#2843)**
by @LaraCalic,  comment by @paulgessinger, updated on 2024-05-15
- ▶  **Stale refactor: unify the GPU device selection ExaTrkX; local variables declaration in FRNN lib (#2925)**
by @hrzhao76,  comment by @hrzhao76, updated on 2024-05-11
- ▶  **Stale refactor: Change the masking of the Geometry Identifiers (#2965)**
by @dimitra97,  **no reviewer**, updated on 2024-05-11
- ▶  **feat: Geometry agnostic space point maker (#2890)**
by @Alonl14,  **no reviewer**, updated on 2024-05-07
- ▶   **feat: 'CylinderVolumeStack' (#3065)**
by @paulgessinger,  **no reviewer**, updated on 2024-06-04
- ▶   **feat(gx2f): support non-diagonal covariances (#3240)**
by @AJPfleger,  **no reviewer**, updated on 2024-06-04























acts-project/acts: Open PRs IV

- ▶   **feat: geo model detector elements, converters and plugins (#3213)**
by @asalzburger,  comment by @asalzburger, updated on 2024-06-04
- ▶   **feat: GSF Debugger (#2682)**
by @benjaminhuth,  **no reviewer**, updated on 2024-06-04
- ▶   **refactor!: Track EDM brush over (#3192)**
by @andiwand,  comment by @andiwand, updated on 2024-06-03
- ▶   **ci: Switch main CI job to Ubuntu 24.04 (#3227)**
by @AJPfleger,  comment by @andiwand, updated on 2024-06-03
- ▶   **refactor: Remove target volume estimation from 'Navigator' (#3242)**
by @andiwand,  **no reviewer**, updated on 2024-06-01
- ▶   **feat: Detray plugin (#3184)**
by @EleniXoch,  comment by @niermann999, updated on 2024-05-31
- ▶   **refactor: Remove 'forceIntersectBoundaries' from 'Navigator' (#3238)**
by @andiwand,  **no reviewer**, updated on 2024-05-30
























acts-project/acts: Open PRs ▼

- ▶   **feat: Hashing seeding algorithm (#3148)**
by @CouthuresJeremy,  comment by @CouthuresJeremy, updated on 2024-05-28
- ▶   **feat: Reverse track finding for Examples (#3200)**
by @andiwand,  **no reviewer**, updated on 2024-05-27
- ▶   **feat: Variable size measurement (#3107)**
by @andiwand,  comment by @andiwand, updated on 2024-05-27
- ▶   **Stale refactor: add geohook for fast digitization range selection to itk example (#2089)**
by @niermann999,  **no reviewer**, updated on 2024-05-25
- ▶   **Stale refactor!: Surface returns transform by value (#2527)**
by @asalzburger,  **no reviewer**, updated on 2024-05-25
- ▶   **Stale refactor: Physmon in pytest (#2575)**
by @paulgessinger,  comment by @paulgessinger, updated on 2024-05-25





















acts-project/acts: Open PRs VI

- ▶   **fix: Correct the Sign of Drift Distance (#2538)**
by @beomki-yeo,  comment by @paulgessinger, updated on 2024-05-25
- ▶    **feat: Add GSF component momentum cut to stabilize fit (#2661)**
by @benjaminhuth,  comment by @benjaminhuth, updated on 2024-05-25
- ▶   **refactor!: Move 'Navigator' external surfaces into options (#3189)**
by @andiwand,  **no reviewer**, updated on 2024-05-24
- ▶   **refactor!: Refactor direct navigator initialization (#3183)**
by @andiwand,  **no reviewer**, updated on 2024-05-24
- ▶   **refactor!: Refactor navigator options (#3182)**
by @andiwand,  **no reviewer**, updated on 2024-05-24
- ▶   **refactor!: Template on track container frontend 'TrackContainer' (#3193)**
by @andiwand,  **no reviewer**, updated on 2024-05-23
- ▶   **feat: Covariance transport for dense propagation (#2869)**
by @andiwand,  **no reviewer**, updated on 2024-05-22



acts-project/acts: Open PRs VII

- ▶   **feat!: Space point implementation (#1900)**
by @CarloVarni,  comment by @paulgessinger, updated on 2024-05-22
- ▶    **feat: Add CMake presets (#3135)**
by @andiwand,  **no reviewer**, updated on 2024-05-22
- ▶   **refactor!: Split propagator options (#3181)**
by @andiwand,  **no reviewer**, updated on 2024-05-15
- ▶   **refactor: Replace 'EigenStepper' extension list with single extension (#2865)**
by @andiwand,  **no reviewer**, updated on 2024-05-14
- ▶   **feat: Propagator Helpers (#2945)**
by @andiwand,  **no reviewer**, updated on 2024-05-14
- ▶   **refactor: Bump min json ver, make json keys static (#2968)**
by @paulgessinger,  **no reviewer**, updated on 2024-05-10
- ▶    **test: Test field invariance of direction uncertainty transport (#2983)**
by @andiwand,  **no reviewer**, updated on 2024-05-04

















acts-project/acts: Open PRs VIII

- ▶   **WIP**  **Stale** **chore: Introduce macOS arm64 CI (#2755)**
by @paulgessinger,  **no reviewer**, updated on 2024-04-17
- ▶   **WIP**  **Stale** **perf: performance plots (#2844)**
by @LaraCalic,  **no reviewer**, updated on 2024-03-06
- ▶   **WIP**  **Stale** **feat: Structured logging (#2684)**
by @paulgessinger,  **no reviewer**, updated on 2023-12-21
- ▶   **WIP**  **Stale** **feat: Random transformations of aligned sensors (#2519)**
by @LaraCalic,  comment by @paulgessinger, updated on 2023-12-08
- ▶   **WIP**  **Stale** **feat: Adding grouping mechanism and delta calculations (#2520)**
by @LaraCalic,  comment by @paulgessinger, updated on 2023-12-08











- ▶ **🕒 improvement: make TGeoParser aware of non-identity transforms from initial search volumes (#3235)**
by @pbutti, updated on 2024-05-30
- ▶ **🕒 ci: kodiak does not update branches on automerge (#3234)**
by @AJPfleger, updated on 2024-05-30
- ▶ **🕒 Project build flags are difficult to control (2024.05.29.) (#3231)**
by @krasznaa, updated on 2024-05-29

- ▶  **Stale** feat: **Add per event timing** (#3124)
by @CouthuresJeremy,  **no reviewer**, updated on 2024-06-01











acts-project/acts: All stale Issues / PRs I

- ▶  **Stale** feat: **Add per event timing** (#3124)
by @CouthuresJeremy,  **no reviewer**, updated on 2024-06-01
- ▶  **Stale** EDM Memory usage (#1516)
by @paulgessinger, updated on 2024-05-25
- ▶  **Stale** Detailed timing per event (#1700)
by @CouthuresJeremy, updated on 2024-05-25
- ▶   **Stale** refactor: add geohook for fast digitization range selection to itk example (#2089)
by @niermann999,  **no reviewer**, updated on 2024-05-25
- ▶   **Stale** refactor!: Surface returns transform by value (#2527)
by @asalzburger,  **no reviewer**, updated on 2024-05-25
- ▶   **Stale** refactor: Physmon in pytest (#2575)
by @paulgessinger,  **no reviewer**, updated on 2024-05-25
- ▶   **Stale** feat: Add GSF component momentum cut to stabilize fit (#2661)
by @benjaminhuth,  **no reviewer**, updated on 2024-05-25












acts-project/acts: All stale Issues / PRs II

- ▶  **Stale Question: Set a different value of eta range using ODD (#2776)**
by @rubihason, updated on 2024-05-25
- ▶  **Stale Write Fatras documentation (#2796)**
by @andiwand, updated on 2024-05-25
- ▶  **Stale bug: documentation always builds in '<source>' (#2798)**
by @AJPfleger, updated on 2024-05-25
- ▶   **Stale feat: Add CMake presets (#3135)**
by @andiwand,  **no reviewer**, updated on 2024-05-22
- ▶  **Stale bug: IVF is throwing errors in ODD full chain (#3120)**
by @andiwand, updated on 2024-05-18
- ▶  **Stale Documentation on geometry misalignments (#2940)**
by @paulgessinger, updated on 2024-05-17
- ▶  **Stale Bug: material map auto tuning only considers the "Default" mapping type (#2942)**
by @plariono, updated on 2024-05-17
- ▶  **Stale bug: some dependencies in setup script wrong (#3014)**
by @AJPfleger, updated on 2024-05-17








acts-project/acts: All stale Issues / PRs III














- ▶  **Stale refactor: unify the GPU device selection ExaTrkX; local variables declaration in FRNN lib (#2925)**
by @hrzhao76,  **no reviewer**, updated on 2024-05-11
- ▶  **Stale refactor: Change the masking of the Geometry Identifiers (#2965)**
by @dimitra97,  **no reviewer**, updated on 2024-05-11
- ▶  **Stale perf: CKF measurement selector runs after track state creation (#3081)**
by @andiwand, updated on 2024-05-05
- ▶  **Stale perf: CKF general (#3082)**
by @andiwand, updated on 2024-05-05
- ▶  **Stale Some 'toStream' implementations change the state of 'std::ostream' (#3079)**
by @andiwand, updated on 2024-05-04
- ▶  **WIP Stale test: Test field invariance of direction uncertainty transport (#2983)**
by @andiwand,  **no reviewer**, updated on 2024-05-04
- ▶  **Stale HepMC plugin looks incomplete (#3050)**
by @andiwand, updated on 2024-04-26








acts-project/acts: All stale Issues / PRs IV

- ▶   **Stale** chore: Introduce macOS arm64 CI (#2755)
by @paulgessinger,  **no reviewer**, updated on 2024-04-17
- ▶  **Stale** 'EigenStepper' (and extensions) cannot be easily extended for dense environment covariance transport (#2868)
by @andiwand, updated on 2024-03-20
- ▶   **Stale** perf: performance plots (#2844)
by @LaraCalic,  **no reviewer**, updated on 2024-03-06
- ▶  **Stale** 'Stepper' and 'Navigator' cannot be configured by 'PropagatorOptions' (#2861)
by @andiwand, updated on 2024-02-09
- ▶  **Stale** Fitters use 'PropagatorPlainOptions' and not 'PropagatorOptions' (#2862)
by @andiwand, updated on 2024-02-09
- ▶  **Stale** 'AdaptiveGridTrackDensity' has a hidden 'd0' cut (#2840)
by @andiwand, updated on 2024-01-17
- ▶  **Stale** Duplication in 'AdaptiveGridTrackDensity' and 'GaussianGridTrackDensity' (#2841)
by @andiwand, updated on 2024-01-17









acts-project/acts: All stale Issues / PRs V

- ▶  **Stale EDM4hep parameter conversion should use jacobians directly (#2813)**
by @paulgessinger, updated on 2024-01-11
- ▶  **Stale 'Surface::boundToFreeJacobian' could also use 'FreeVector' parameters (#2810)**
by @andiwand, updated on 2024-01-10
- ▶  **Stale Telescope detector cookbook (#2800)**
by @paulgessinger, updated on 2024-01-10
- ▶  **Stale Write CKF documentation (#2794)**
by @paulgessinger, updated on 2024-01-10
- ▶  **Stale Add description of Blueprint tree and how it can be used to create layerless detector. (#2785)**
by @paulgessinger, updated on 2024-01-10
- ▶  **Stale Describe replacements of TrackingGeometry, TrackingVolume etc and how the classes map to one another. (#2786)**
by @paulgessinger, updated on 2024-01-10
- ▶  **Stale Describe how the legacy geometry used to work and how it differs from the layerless geometry (#2787)**
by @paulgessinger, updated on 2024-01-10









- ▶  Stale **'SurfaceReached' aborter is messing with the step size (#2738)**
by @andiwand, updated on 2023-12-28
- ▶  Stale **Propagation state cannot be initialized outside the propagation (#2736)**
by @andiwand, updated on 2023-12-28
- ▶   WIP Stale **feat: Structured logging (#2684)**
by @paulgessinger,  **no reviewer**, updated on 2023-12-21
- ▶   WIP Stale **feat: Random transformations of aligned sensors (#2519)**
by @LaraCalic,  **no reviewer**, updated on 2023-12-08
- ▶   WIP Stale **feat: Adding grouping mechanism and delta calculations (#2520)**
by @LaraCalic,  **no reviewer**, updated on 2023-12-08
- ▶  Stale **FPE: AMVF keepNewVertex (#2590)**
by @andiwand, updated on 2023-11-26
- ▶  Stale **Track finding rework (#2320)**
by @paulgessinger, updated on 2023-11-11

- ▶  **Stale Propagator step count limit reached and Step size adjustment exceeds maximum trials (#2469)**
by @CarloVarni, updated on 2023-11-11
- ▶  **Stale [Feature Request] Reference surface for tracking algorithm is hardcoded to be at origin (#2525)**
by @janheinri, updated on 2023-11-09
- ▶  **Stale Incorrect material interaction in backward propagation ? (#2429)**
by @Corentin-Allaire, updated on 2023-10-06
- ▶  **Stale Expand TrackingGeometry building from DD4hep with user given input (#2403)**
by @asalzburger, updated on 2023-09-27
- ▶  **Stale FPE: Bethe-Heitler gamma_distribution (#2346)**
by @paulgessinger, updated on 2023-09-03
- ▶  **Stale FPE: GaussianMixtureReduction (#2347)**
by @paulgessinger, updated on 2023-09-03
- ▶  **Stale FPE: RootTrajectoryStatesWriter (#2348)**
by @paulgessinger, updated on 2023-09-03









acts-project/acts: All stale Issues / PRs VIII

- ▶  **Stale FPE: RootTrajectorySummaryWriter (#2284)**
by @paulgessinger, updated on 2023-08-12
- ▶  **Stale Inconsistent use of 'VolumeMaterialInteraction' thickness (#2279)**
by @andiwand, updated on 2023-08-05
- ▶  **Stale Move some Digitization code from FATRAS to Core? (#2230)**
by @benjaminhuth, updated on 2023-07-28
- ▶  **Stale MultiTrajectory buffer default constructible (#2154)**
by @tboldagh, updated on 2023-07-20
- ▶  **Stale Track nDoF only returns the sum of calibrated size and not the actual DoFs. (#2076)**
by @pbutti, updated on 2023-06-22
- ▶  **Stale Track parameter estimation algorithm return parameter on the first seed SP surface (#2037)**
by @Corentin-Allaire, updated on 2023-05-25
- ▶  **Stale Expose individual steps of track reconstruction in full_chain python scripts (#1997)**
by @tboldagh, updated on 2023-05-20
- ▶  **Stale Different results for full_chain_itk when running locally vs lxxplus (#1819)**
by @CarloVarni, updated on 2023-05-09









acts-project/acts: All stale Issues / PRs IX





- ▶  **Stale Bug: Probable Issues in Bevelled Cylinder Implementation (#1238)**
by @rahmans1, updated on 2023-05-09
- ▶  **Stale Physmon throws many WARNINGS on Bethe-Heitler approximation (#1748)**
by @paulgessinger, updated on 2023-05-09
- ▶  **Stale SpacePoint EDM design (#1971)**
by @CarloVarni, updated on 2023-05-09
- ▶  **Stale vertex fitting and duplicate tracks (#1992)**
by @rubihason, updated on 2023-05-09
- ▶  **Stale Estimate Track Parameters from Seeds use only one surface. What about strips? (#1895)**
by @CarloVarni, updated on 2023-05-09
- ▶  **Stale Bug: Unpredicable navigation in layer with overlapping surface (#1852)**
by @Corentin-Allaire, updated on 2023-03-25
- ▶  **Stale Make central minimum track momentum threshold (#1761)**
by @paulgessinger, updated on 2023-01-21
- ▶  **Stale Optimal seeding parameters for a detector (#1699)**
by @CouthuresJeremy, updated on 2023-01-05

acts-project/acts: All stale Issues / PRs X

- ▶  **Stale Particle smearing assertion with Geant4 (#1603)**
by @benjaminhuth, updated on 2022-12-21
- ▶  **Stale Documentation update: Examples (#1420)**
by @paulgessinger, updated on 2022-11-23
- ▶  **Stale Documentation update: How-to (core) (#1422)**
by @paulgessinger, updated on 2022-11-23
- ▶  **Stale Documentation update: Plugins (#1421)**
by @paulgessinger, updated on 2022-10-22
- ▶  **Stale Vertexing produces vertex candidates that are unreasonable (#1361)**
by @paulgessinger, updated on 2022-10-22
- ▶  **Stale Optionally have the vertex finding recalculate perigee parameters relative to consistent reference (#1482)**
by @paulgessinger, updated on 2022-10-01
- ▶  **Stale Full chain vertexing with AMVF (#1406)**
by @paulgessinger, updated on 2022-10-01
- ▶  **Stale Vertexing produces unexpectedly poor efficiency (#1362)**
by @paulgessinger, updated on 2022-09-20

acts-project/acts: All stale Issues / PRs XI

- ▶  **Stale Ambiguous perigees with low momentum (#1386)**
by @andiwand, updated on 2022-09-20
- ▶  **Stale Fatras: Bethe-Heitler calculation wrong? (#1437)**
by @asalzbürger, updated on 2022-09-20
- ▶  **Stale Some writers performs their writes in the destructor (#881)**
by @paulgessinger, updated on 2022-08-11
- ▶  **Stale Vertexing issues observed in python vertexing example (#1091)**
by @paulgessinger, updated on 2022-08-11
- ▶  **Stale Magnetic Field Storage (#1239)**
by @osbornjd, updated on 2022-06-12
- ▶  **Stale Cut tube segment dd4hep conversion tests (#1146)**
by @rahmans1, updated on 2022-05-25
- ▶  **Stale Bug: issue on first build after DD4hep update on system with globally installed acts (#1139)**
by @gagnonlg, updated on 2022-02-22
- ▶  **Stale Add example (+test) for vertex fitting with constraints (#1100)**
by @paulgessinger, updated on 2022-01-07

- ▶  **Stale** **Should seed finding tools have a higher-level interface?** (#988)
by @stephenswat, updated on 2021-11-25
- ▶  **Stale** **Improvement: Estimate track parameters from seed at perigee surface** (#1036)
by @XiaocongAi, updated on 2021-11-10
- ▶  **Stale** **Tracking for TPC/DC without surfaces** (#165)
by @FabianKlimpel, updated on 2021-11-04
- ▶  **Stale** **BoundingBox tests fail on double precision** (#752)
by @paulgessinger, updated on 2021-11-04