

































Pull request and issue summary for acts-project/acts

June 18, 2024

















acts-project/acts: PRs merged between 2024-06-11 and 2024-06-18 |
















- ▶  **feat(gx2f): support non-diagonal covariances (#3240)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-11
- ▶  **feat: Add 'TryAllOverstepNavigator' (#2850)**
by @andiwand,  reviewed by @benjaminhuth, merged on 2024-06-11
- ▶  **feat: geo model detector elements, converters (#3256)**
by @benjaminhuth,  reviewed by @andiwand, merged on 2024-06-11
- ▶  **refactor: physmon: full pT range for GX2F (#3275)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-11
- ▶  **refactor!: (gx2f) remove 'zeroField' option and make implicit (#3276)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-12
- ▶  **feat(gx2f): support n-dimensional measurements (#3264)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-12
- ▶  **docs: Update navigators documentation (#3271)**
by @andiwand,  reviewed by @AJPfleger, merged on 2024-06-12
- ▶  **feat: change to detector json converter for detrax (#3277)**
by @asalzburger,  reviewed by @niermann999, merged on 2024-06-12

acts-project/acts: PRs merged between 2024-06-11 and 2024-06-18 II
















- ▶  **feat: adding some functionality to material mapping checks (#3266)**
by @asalzburger,  comment by @Corentin-Allaire, merged on 2024-06-13
- ▶  **feat!: (gx2f) generalise ndf calculation for error 'NotEnoughMeasurements' (#3278)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-13
- ▶  **fix: Early exit in the seeding if there are no space points for top/bottom... (#3284)**
by @CarloVarni,  reviewed by @LuisFelipeCoelho, merged on 2024-06-13
- ▶  **build: Exclude Examples tests from Core tests, phony target (#3279)**
by @paulgessinger,  reviewed by @benjaminhuth, merged on 2024-06-13
- ▶  **feat: Introduce scope failure threshold helper (#3290)**
by @paulgessinger,  reviewed by @AJPfleger, merged on 2024-06-13
- ▶  **ci: Add dependabot configuration (#3265)**
by @paulgessinger,  reviewed by @AJPfleger, merged on 2024-06-13
- ▶  **perf: Avoid two divisions in parameter estimation from seeds (#3287)**
by @CarloVarni,  reviewed by @andiwand, merged on 2024-06-14
- ▶  **feat: establishing Detector from GeoModel with db blueprint (Gen2) (#3289)**
by @asalzburger,  reviewed by @benjaminhuth, merged on 2024-06-14

acts-project/acts: PRs merged between 2024-06-11 and 2024-06-18 III

















- ▶  **feat: middle SP z selection as result of grid binning (#3286)**
by @CarloVarni,  reviewed by @LuisFelipeCoelho, merged on 2024-06-14
- ▶  **refactor(gx2f): make constant TrackStatePropMask (#3293)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-14
- ▶  **feat: Cylinder and Disc surface merging (#3288)**
by @paulgessinger,  reviewed by @andiwand, merged on 2024-06-14
- ▶  **refactor(gx2f): clean up logging before material PR (#3294)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-15
- ▶  **fix(gx2f): forward propagation error (#3296)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-16
- ▶  **docs: update links to avoid redirects (#3297)**
by @AJPfleger,  reviewed by @andiwand, merged on 2024-06-16
- ▶  **chore: Replace legacy limits with std::numeric_limits or similar for consistency (#3298)**
by @AJPfleger,  reviewed by @paulgessinger, merged on 2024-06-17
- ▶  **docs: update linkcheck (#3307)**
by @AJPfleger,  reviewed by @benjaminhuth, merged on 2024-06-18

- ▶  **refactor: replace C-style 'type_t' with 'std::type_t' (#3301)**
by @AJPfleger,  reviewed by @LuisFelipeCoelho, updated on 2024-06-18
- ▶  **fix: Configuration of highOccupancyConfig for itk Seeding example (#3295)**
by @pbutti,  reviewed by @LuisFelipeCoelho, updated on 2024-06-18
- ▶  **refactor!: Remove 'overstepLimit' from 'EigenStepper' (#3224)**
by @andiwand,  reviewed by @benjaminhuth, updated on 2024-06-18
- ▶  **feat: Add Frustum/Octree Navigation (#3306)**
by @Matthewharri, review requested, review requested, updated on 2024-06-18
- ▶  **ci: update black-version and pre-commit mirror (#3305)**
by @AJPfleger,  reviewed by @paulgessinger, updated on 2024-06-18
- ▶  **build, fix: Public Header Relocatability, main branch (2024.06.18.) (#3303)**
by @krasznaa,  **no reviewer**, updated on 2024-06-18
- ▶  **ci: generalise job size_t to type_t (#3302)**
by @AJPfleger,  **no reviewer**, updated on 2024-06-18
- ▶  **refactor!: Remove 'Measurement' from Core (#3282)**
by @andiwand,  reviewed by @paulgessinger, updated on 2024-06-18

















acts-project/acts: Open PRs II








- ▶  **feat: covfie plugin (#3117)**
by @fredevb,  comment by @fredevb, updated on 2024-06-17
- ▶  **feat: Telescope style seeding (#3300)**
by @ssdetlab,  **no reviewer**, updated on 2024-06-17
- ▶  **feat: Convert geoShapes to DetectorVolumes (#3268)**
by @Matthewharri,  comment by @paulgessinger, updated on 2024-06-17
- ▶  **Stale feat: adding relative transformation + calculation of com function (#3005)**
by @LaraCalic,  comment by @AJPfleger, updated on 2024-06-16
- ▶  **Stale feat: introduction obj simhit writer (#3180)**
by @asalzburger,  **no reviewer**, updated on 2024-06-15
- ▶  **feat: Misalignment shift and test check that only selected modules are shifted (#2843)**
by @LaraCalic,  comment by @paulgessinger, updated on 2024-06-14
- ▶  **test: Add option to only build matching unittests (#3233)**
by @benjaminhuth,  comment by @benjaminhuth, updated on 2024-06-14
- ▶  **build(deps): bump actions/labeler from 4 to 5 (#3291)**
by @dependabot[bot], review requested, updated on 2024-06-14

acts-project/acts: Open PRs III





















- ▶  **feat: GSF Debugger (#2682)**
by @benjaminhuth,  comment by @benjaminhuth, updated on 2024-06-14
- ▶  **feat: tracc plugin (conversion) (#3281)**
by @fredevb,  comment by @paulgessinger, updated on 2024-06-13
- ▶  **refactor!: Axis improvements: move from detail + CTAD (#3257)**
by @paulgessinger,  reviewed by @asalzburger, updated on 2024-06-13
- ▶  **feat: Add method for currentPortal in DetectorNavigator (#3269)**
by @Matthewharri,  **no reviewer**, updated on 2024-06-12
- ▶  **refactor: Move MLAmbiguitySolver to Core (#3272)**
by @Corentin-Allaire,  **no reviewer**, updated on 2024-06-11
- ▶  **refactor!: Rewrite 'BoundaryCheck' (#3170)**
by @andiwand,  comment by @benjaminhuth, updated on 2024-06-11
- ▶  **refactor!: Use track container in Core 'CKF' and pass track proxies to delegates (#3161)**
by @andiwand,  comment by @andiwand, updated on 2024-06-11
- ▶  **refactor!: Seed filter container policy (#3136)**
by @CouthuresJeremy,  comment by @CouthuresJeremy, updated on 2024-06-10

acts-project/acts: Open PRs IV



















- ▶  **refactor!: Move 'Navigator' external surfaces into options (#3189)**
by @andiwand,  **no reviewer**, updated on 2024-06-10
- ▶  **refactor!: Refactor direct navigator initialization (#3183)**
by @andiwand,  **no reviewer**, updated on 2024-06-08
- ▶  **refactor!: Split propagator options (#3181)**
by @andiwand,  **no reviewer**, updated on 2024-06-08
- ▶  **refactor!: Refactor navigator options (#3182)**
by @andiwand,  **no reviewer**, updated on 2024-06-08
- ▶  **refactor!: Update TrackingVolume constructors (#3250)**
by @paulgessinger,  reviewed by @andiwand, updated on 2024-06-07
- ▶  **feat: Geometry agnostic space point maker (#2890)**
by @Alonl14,  **no reviewer**, updated on 2024-06-06
- ▶  **refactor: Do not allocate memory if the surface is connected with a detector el... (#3069)**
by @junggjo9,  comment by @AJPfleger, updated on 2024-06-06
- ▶  **refactor!: Remove 'CylinderBounds::inside3D' (#3204)**
by @andiwand,  reviewed by @paulgessinger, updated on 2024-06-05

- ▶  refactor: **Some internal GSF refactorings (#2697)**
by @benjaminhuth, ❌ changes requested by @andiwand, updated on 2024-05-28
- ▶  refactor: **Use Core CKF extrapolation after inwards extension (#3195)**
by @andiwand, ⚠️ **no reviewer**, updated on 2024-05-22
- ▶  refactor: **change the definition of the rotation parameters (#2021)**
by @XiaocongAi, ✅ reviewed by @paulgessinger, updated on 2024-05-22
- ▶  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
- ▶  WIP feat(gx2f): **material effects - multiple scattering (#3292)**
by @AJPflegler, ⚠️ **no reviewer**, updated on 2024-06-18
- ▶  WIP ci: **extend black formatting to jupyter notebooks (#3304)**
by @AJPflegler, ⚠️ **no reviewer**, updated on 2024-06-18






















acts-project/acts: Open PRs VI

- ▶   **ci: Update CI job to newer OS (drop ubuntu 20.04, centos7/8) (#3227)**
by @AJPfleger,  comment by @andiwand, updated on 2024-06-18
- ▶   **refactor: path handling to use 'std::filesystem' (#3308)**
by @AJPfleger,  **no reviewer**, updated on 2024-06-18
- ▶   **feat: Detray plugin geometry (#3299)**
by @EleniXoch,  **no reviewer**, updated on 2024-06-16
- ▶   **refactor: Remove 'lastHierarchySurfaceReached' from 'Navigator' (#3237)**
by @andiwand,  reviewed by @paulgessinger, updated on 2024-06-14
- ▶    **refactor: Replace 'EigenStepper' extension list with single extension (#2865)**
by @andiwand,  **no reviewer**, updated on 2024-06-14
- ▶    **feat: Propagator Helpers (#2945)**
by @andiwand,  **no reviewer**, updated on 2024-06-13



















acts-project/acts: Open PRs VII

- ▶   **fix: Switch to layer targeting in any case, remove condition to skip to boundaries** (#3280)
by @benjaminhuth,  **no reviewer**, updated on 2024-06-13
- ▶   **refactor: Remove 'forceIntersectBoundaries' from 'Navigator'** (#3238)
by @andiwand,  reviewed by @benjaminhuth, updated on 2024-06-13
- ▶   **refactor: Resolve surfaces on initialization in 'Navigator'** (#3283)
by @andiwand,  **no reviewer**, updated on 2024-06-13
- ▶   **fix(gx2f): use all states for 'jacobianFromStart'** (#3274)
by @AJPfleger,  **no reviewer**, updated on 2024-06-12
- ▶   **tmp: Test pixel/strip hole branch stopper in Examples track finding** (#3273)
by @andiwand,  **no reviewer**, updated on 2024-06-11
- ▶   **feat: Add per event timing** (#3124)
by @CouthuresJeremy,  comment by @andiwand, updated on 2024-06-11



























acts-project/acts: Open PRs VIII









- ▶   **feat: Hashing seeding algorithm (#3148)**
by @CouthuresJeremy,  comment by @CouthuresJeremy, updated on 2024-06-11
- ▶   **feat: geo model detector elements, converters and plugins (#3213)**
by @asalzburger,  comment by @benjaminhuth, updated on 2024-06-11
- ▶   **Stale refactor: Bump min json ver, make json keys static (#2968)**
by @paulgessinger,  **no reviewer**, updated on 2024-06-09
- ▶   **refactor!: Template on track container frontend 'TrackContainer' (#3193)**
by @andiwand,  comment by @paulgessinger, updated on 2024-06-05
- ▶   **refactor!: Track EDM brush over (#3192)**
by @andiwand,  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: Reverse track finding for Examples (#3200)**
by @andiwand,  **no reviewer**, updated on 2024-05-27











acts-project/acts: Open PRs IX

- ▶   **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
- ▶   **fix: Correct the Sign of Drift Distance (#2538)**
by @beomki-yeo,  comment by @paulgessinger, updated on 2024-05-25
- ▶   **Stale feat: Add GSF component momentum cut to stabilize fit (#2661)**
by @benjaminhuth,  comment by @benjaminhuth, updated on 2024-05-25
















acts-project/acts: Open PRs X

- ▶   **feat: Covariance transport for dense propagation (#2869)**
by @andiwand,  **no reviewer**, updated on 2024-05-22
- ▶   **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
- ▶    **test: Test field invariance of direction uncertainty transport (#2983)**
by @andiwand,  **no reviewer**, updated on 2024-05-04
- ▶    **chore: Introduce macOS arm64 CI (#2755)**
by @paulgessinger,  **no reviewer**, updated on 2024-04-17
- ▶    **perf: performance plots (#2844)**
by @LaraCalic,  **no reviewer**, updated on 2024-03-06
- ▶    **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

- ▶  **Stale** **feat: introduction obj simhit writer (#3180)**
by @asalzburger,  **no reviewer**, updated on 2024-06-15
- ▶  **Stale** **feat: adding relative transformation + calculation of com function (#3005)**
by @LaraCalic,  **no reviewer**, updated on 2024-06-16
- ▶   **Stale** **feat: Propagator Helpers (#2945)**
by @andiwand,  **no reviewer**, updated on 2024-06-13
- ▶   **Stale** **refactor: Replace 'EigenStepper' extension list with single extension (#2865)**
by @andiwand,  **no reviewer**, updated on 2024-06-14













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

- ▶  **Stale** feat: **adding relative transformation + calculation of com function** (#3005)
by @LaraCalic,  **no reviewer**, updated on 2024-06-16
- ▶  **Stale** feat: **introduction obj simhit writer** (#3180)
by @asalzburger,  **no reviewer**, updated on 2024-06-15
- ▶   **Stale** refactor: **Replace 'EigenStepper' extension list with single extension** (#2865)
by @andiwand,  **no reviewer**, updated on 2024-06-14
- ▶   **Stale** feat: **Propagator Helpers** (#2945)
by @andiwand,  **no reviewer**, updated on 2024-06-13
- ▶   **Stale** refactor: **Bump min json ver, make json keys static** (#2968)
by @paulgessinger,  **no reviewer**, updated on 2024-06-09
- ▶  **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












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

- ▶   **WIP** Stale **refactor: add geohook for fast digitization range selection to itk example (#2089)**
by @niermann999,  **no reviewer**, updated on 2024-05-25
- ▶   **WIP** Stale **refactor!: Surface returns transform by value (#2527)**
by @asalzburger,  **no reviewer**, updated on 2024-05-25
- ▶   **WIP** Stale **refactor: Physmon in pytest (#2575)**
by @paulgessinger,  **no reviewer**, updated on 2024-05-25
- ▶   **WIP** Stale **feat: Add GSF component momentum cut to stabilize fit (#2661)**
by @benjaminhuth,  **no reviewer**, updated on 2024-05-25
- ▶  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











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

- ▶   **WIP**  **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
- ▶  **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










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

- ▶  **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
- ▶   **WIP 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












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

- ▶   **WIP** 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
- ▶  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









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

- ▶  **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









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









- ▶   **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

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

- ▶  **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
- ▶  **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

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









- ▶  **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
- ▶  **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: Unpredictable 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
- ▶  **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

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- ▶ **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
- ▶ **Stale Ambiguous perigees with low momentum (#1386)**
by @andiwand, updated on 2022-09-20
- ▶ **Stale Fatras: Bethe-Heitler calculation wrong? (#1437)**
by @asalzburger, 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

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- ▶  **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