Pull request and issue summary for acts-project/acts

January 28, 2025

acts-project/acts: PRs merged between 2025-01-21 and 2025-01-28 I

- ▶ **feat: Plane surface merging** (#4037)
  by @ssdetlab, ✅ reviewed by @paulgessinger, merged on 2025-01-21

- ▶ **fix: Fix enum conversion error in Podio plugin** (#4041)
  by @stephenswat, ✅ reviewed by @paulgessinger, merged on 2025-01-21

- ▶ **refactor: Split particle selection in Examples** (#3969)
  by @andiwand, ✅ reviewed by @benjaminhuth, merged on 2025-01-21

- ▶ **feat: introducing common ProtoAxis concept** (#4034)
  by @asalzburger, ✅ reviewed by @paulgessinger, merged on 2025-01-21

- ▶ **build!: Make third-party libraries system dependencies** (#3949)
  by @stephenswat, ✅ reviewed by @paulgessinger, merged on 2025-01-22

- ▶ **feat!: Updates to GBTS for Athena Implementation** (#3882)
  by @Rosie-Hasan, ✅ reviewed by @timadye, merged on 2025-01-23

- ▶ **feat: adding json conversion and unit test for 'ProtoAxis'** (#4045)
  by @asalzburger, ✅ reviewed by @AJPfleger, merged on 2025-01-24

- ▶ **feat: Adding cuboid volume stack** (#4040)
  by @ssdetlab, ✅ reviewed by @paulgessinger, merged on 2025-01-24

- ▶ ⌥ **feat: Adding planar portal link** (#4044)
  by @ssdetlab, ✅ reviewed by @paulgessinger, merged on 2025-01-24
- ▶ ⌥ **refactor!: move source link creation, track state creation, measurement selection into a single unit outside of the CKF** (#3825)
  by @goetzgaycken, ✅ comment by @goetzgaycken, merged on 2025-01-27
- ▶ ⌥ **feat: Acts::Extent python binding improved** (#4050)
  by @asalzburger, ✅ reviewed by @benjaminhuth, merged on 2025-01-28
- ▶ ⌥ **fix: Fix initialization bug for direct navigator backward mode** (#4051)
  by @benjaminhuth, ✅ reviewed by @andiwand, merged on 2025-01-28

acts-project/acts: Open PRs I

- ▶ 🔀 **refactor!: Move GBTS to experimental namespace** (#4048)
  by @Rosie-Hasan, ✅ comment by @andiwand, updated on 2025-01-28

- ▶ 🔀 **fix: Sequencer run with 0 threads or 0 events** (#4053)
  by @paulgessinger, ⚠️ **no reviewer**, updated on 2025-01-28

- ▶ 🔀 **fix: ScoreBasedAmbiguityResolution to avoid very high score.** (#4052)
  by @Ragansu, ✅ reviewed by @Corentin-Allaire, updated on 2025-01-28

- ▶ 🔀 **fix: Write correct tracks to file for refitting, mask FPE** (#3999)
  by @benjaminhuth, ✅ comment by @coderabbitai[bot], updated on 2025-01-28

- ▶ 🔀 **feat: Adding cuboid portal shell** (#4047)
  by @ssdetlab, ✅ comment by @coderabbitai[bot], updated on 2025-01-28

- ▶ 🔀 **feat: Add TensorRT support for GNNs** (#4016)
  by @benjaminhuth, ✅ reviewed by @andiwand, updated on 2025-01-28

- ▶ 🔀 **ci: Spack** (#3980)
  by @paulgessinger, ✅ comment by @paulgessinger, updated on 2025-01-27

- ▶ 🔀 **refactor: 'ProtoLayer' can (optionally) hold mutable surfaces** (#4030)
  by @paulgessinger, ✅ reviewed by @asalzburger, updated on 2025-01-27

acts-project/acts: Open PRs II

- ▶ **chore: automated python requirements upgrades** (#3924)
  by @github-actions[bot], ❌ changes requested by @AJPfleger, updated on 2025-01-26
- ▶ **refactor: simplify track selection logic in AlignmentAlgorithm** (#3934)
  by @AJPfleger, ✅ comment by @coderabbitai[bot], updated on 2025-01-24
- ▶ **refactor!: material: 'double' for pathCorrection** (#3920)
  by @AJPfleger, ✅ comment by @coderabbitai[bot], updated on 2025-01-24
- ▶ **refactor: remove redundant logical in covariance helper** (#4033)
  by @AJPfleger, review requested, updated on 2025-01-24
- ▶ **fix: compilation without geant4** (#4003)
  by @goetzgaycken, ✅ comment by @paulgessinger, updated on 2025-01-23
- ▶ **docs: Add troubleshooting section for Spack** (#3881)
  by @stephenswat, ✅ comment by @coderabbitai[bot], updated on 2025-01-23
- ▶ **feat: Add closest point and distance computation to 'SurfaceBounds'** (#3990)
  by @andiwand, ✅ comment by @coderabbitai[bot], updated on 2025-01-22
- ▶ **ci: Add extra build job with clang 19** (#3943)
  by @stephenswat, ✅ comment by @coderabbitai[bot], updated on 2025-01-22

acts-project/acts: Open PRs III

- ⑂ **feat: External surfaces for GSF** (#3970)
  by @benjaminhuth, ✅ comment by @coderabbitai[bot], updated on 2025-01-22

- ⑂ Stale **add misalignment decoration for DD4hep detector** (#3891)
  by @Zequn-SUN, ✅ comment by @coderabbitai[bot], updated on 2025-01-22

- ⑂ **refactor!: Decouple stepping from navigation** (#4039)
  by @andiwand, ✅ comment by @coderabbitai[bot], updated on 2025-01-21

- ⑂ **build: find Python after DD4hep to find the correct one** (#4042)
  by @jmcarcell, ⚠️ **no reviewer**, updated on 2025-01-21

- ⑂ **chore: fix more sonarcloud issues** (#4017)
  by @asalzburger, ✅ reviewed by @vincent89291, updated on 2025-01-21

- ⑂ Stale **feat: Add/activate reverse filter cov inflation for KF and GSF** (#3996)
  by @benjaminhuth, ✅ comment by @coderabbitai[bot], updated on 2025-01-18

- ⑂ **chore: Add 'google-explicit-constructor' to clang-tidy config** (#3972)
  by @paulgessinger, ✅ comment by @coderabbitai[bot], updated on 2025-01-17

- ⑂ **feat: Update athena dump reader** (#4011)
  by @benjaminhuth, ✅ comment by @coderabbitai[bot], updated on 2025-01-16

acts-project/acts: Open PRs IV

- ⑂ **feat(physmon): compare GX2F vs KF truth tracking** (#3889)
  by @AJPfleger, ✅ comment by @coderabbitai[bot], updated on 2025-01-15

- ⑂ **feat: Adding efficiency vs production radius to output root files (Revision of PR #3539)** (#3981)
  by @delitez, ✅ comment by @coderabbitai[bot], updated on 2025-01-15

- ⑂ **feat: Structured logging** (#3955)
  by @paulgessinger, ✅ comment by @coderabbitai[bot], updated on 2025-01-10

- ⑂ **feat: Conversion and chain code in traccc** (#3656)
  by @stephenswat, ✅ comment by @coderabbitai[bot], updated on 2025-01-09

- ⑂ Stale **refactor!: Make nlohmann::json a public dependency** (#3954)
  by @paulgessinger, ✅ comment by @coderabbitai[bot], updated on 2025-01-08

- ⑂ Stale **feat: Adding G4Trap converter in Geant4Converters** (#3775)
  by @ldamenti, ✅ comment by @coderabbitai[bot], updated on 2025-01-04

- ⑂ Stale **feat: Add 'noexcept' specifier to 'Acts::Any'** (#3743)
  by @benjaminhuth, ✅ comment by @paulgessinger, updated on 2025-01-04

acts-project/acts: Open PRs V

- ▶ 🔀 `Stale` **chore: SonarCloud fixes, part 0** (#3942)
  by @asalzburger, ✅ comment by @coderabbitai[bot], updated on 2025-01-04

- ▶ 🔀 `Stale` **feat: bump detray version, add material tracer** (#3755)
  by @asalzburger, ✅ comment by @coderabbitai[bot], updated on 2025-01-03

- ▶ 🔀 `Stale` **feat: traccc plugin (conversion)** (#3281)
  by @fredevb, ✅ comment by @coderabbitai[bot], updated on 2024-12-30

- ▶ 🔀 `Stale` **feat: traccc chain in examples (common chain logic and CPU chain)** (#3320)
  by @fredevb, ✅ comment by @coderabbitai[bot], updated on 2024-12-30

- ▶ 🔀 `Stale` **fix: detray plugin (cmake flags, CI, and compile errors)** (#3363)
  by @fredevb, ✅ comment by @coderabbitai[bot], updated on 2024-12-30

- ▶ 🔀 `Stale` **refactor: Lift GenericDetector to a Plugin** (#3425)
  by @benjaminhuth, ✅ comment by @coderabbitai[bot], updated on 2024-12-29

- ▶ 🔀 `Stale` **feat: traccc plugin refactor, traccc chain reconstruction only, and fixes** (#3505)
  by @fredevb, ✅ comment by @coderabbitai[bot], updated on 2024-12-29

acts-project/acts: Open PRs VI

- ⟨Stale⟩ **feat: Add a fastjet plugin** (#3617)
  by @gagnonlg, ✅ comment by @coderabbitai[bot], updated on 2024-12-29

- ⟨WIP⟩ **chore: remove 'ProtoBinning' in favour of 'ProtoAxis'** (#4046)
  by @asalzburger, ✅ comment by @coderabbitai[bot], updated on 2025-01-25

- ⟨WIP⟩ **refactor: Some internal GSF refactorings** (#2697)
  by @benjaminhuth, ❌ changes requested by @andiwand, updated on 2025-01-22

- ⟨WIP⟩ **feat: move MaterialTrackWriting infrastructure to Core + first use of RNTuple** (#4043)
  by @asalzburger, ✅ comment by @asalzburger, updated on 2025-01-21

- ⟨WIP⟩ **refactor!: Make constructors explicit** (#3975)
  by @paulgessinger, review requested, updated on 2025-01-20

- ⟨WIP⟩ **feat!: Allow propagator initialization to fail** (#4036)
  by @andiwand, ⚠️ **no reviewer**, updated on 2025-01-17

- ⟨WIP⟩ ⟨Stale⟩ **feat: Marking Edgeholes during track finding** (#3988)
  by @pbutti, ✅ comment by @goetzgaycken, updated on 2025-01-17

acts-project/acts: Open PRs VII

- ⑂ 🚧 WIP `Stale` **refactor!: Always return a magnetic field vector** (#3951)
  by @andiwand, ✅ comment by @andiwand, updated on 2025-01-16

- ⑂ 🚧 WIP `Stale` **fix: Prefer external surface candidates in Navigation** (#3989)
  by @andiwand, ✅ comment by @benjaminhuth, updated on 2025-01-15

- ⑂ 🚧 WIP `Stale` **refactor!: explicit constructors** (#3762)
  by @AJPfleger, ⚠️ **no reviewer**, updated on 2025-01-15

- ⑂ 🚧 WIP `Stale` **refactor: Bump min json ver, make json keys static** (#2968)
  by @paulgessinger, review requested, updated on 2025-01-06

- ⑂ 🚧 WIP `Stale` **docs: Some accumulated docs fixes** (#3962)
  by @andiwand, ⚠️ **no reviewer**, updated on 2025-01-05

- ⑂ 🚧 WIP `Stale` **feat: Adding efficiency vs production radius to output root files** (#3539)
  by @AichaMattouhi, ✅ comment by @paulgessinger, updated on 2025-01-05

- ⑂ 🚧 WIP `Stale` **perf: add 2d perf plots** (#3893)
  by @XiaocongAi, ⚠️ **no reviewer**, updated on 2025-01-03

acts-project/acts: Open PRs VIII

- 🔀 🚧 WIP Stale **refactor: avoid 'addWhiteboardAlias' in truth tracking examples** (#3936)
  by @AJPfleger, ✅ comment by @andiwand, updated on 2025-01-02

- 🔀 🚧 WIP Stale **refactor: reduce complexity of highly nested blocks** (#3633)
  by @AJPfleger, ✅ comment by @AJPfleger, updated on 2025-01-01

- 🔀 🚧 WIP Stale **refactor: Add helper for Transform inversion** (#3750)
  by @paulgessinger, ⚠️ **no reviewer**, updated on 2025-01-01

- 🔀 🚧 WIP Stale **feat: Add GSF component momentum cut to stabilize fit** (#2661)
  by @benjaminhuth, ✅ comment by @benjaminhuth, updated on 2024-12-30

- 🔀 🚧 WIP Stale **refactor!: Middle range strategy** (#3719)
  by @CarloVarni, ✅ comment by @paulgessinger, updated on 2024-12-28

- 🔀 🚧 WIP Stale **refactor!: Seed Finders create collection of 'Seed<external_spacepoint_t>'
  instead of 'Seed<Proxy<external_spacepoint_t»'** (#3729)
  by @CarloVarni, ✅ comment by @coderabbitai[bot], updated on 2024-12-28

acts-project/acts: Open PRs IX

- ⑂ 🚧 WIP | Stale | **feat: Add per event timing** (#3124)
  by @CouthuresJeremy, ✅ comment by @andiwand, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **feat: traccc cuda example** (#3372)
  by @fredevb, ⚠️ **no reviewer**, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **build: physmon for traccc chains (host and cuda)** (#3403)
  by @fredevb, ⚠️ **no reviewer**, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **feat: Added possibility to keep intermediate particles from PythiaGenerator WIP** (#3414)
  by @pbutti, ⚠️ **no reviewer**, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **refactor: Move config files from ODD to Acts to ensure compatibility** (#3407)
  by @benjaminhuth, ⚠️ **no reviewer**, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **chore: Bump minimum boost version to 1.78.0** (#3517)
  by @paulgessinger, ⚠️ **no reviewer**, updated on 2024-11-29

- ⑂ 🚧 WIP | Stale | **refactor: Detector Element refactoring proposal** (#3574)
  by @benjaminhuth, ✅ comment by @asalzburger, updated on 2024-11-29

▶ ⊙ **Use of Eigen causes segmentation faults in digitization reader** (#4049)
by @stephenswat, updated on 2025-01-25

▶ 🔀 Stale **add misalignment decoration for DD4hep detector** (#3891)
  by @Zequn-SUN, ⚠️ **no reviewer**, updated on 2025-01-22

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

- ▶ 🔀 `Stale` **add misalignment decoration for DD4hep detector** (#3891)
  by @Zequn-SUN, ⚠️ **no reviewer**, updated on 2025-01-22

- ▶ ⊙ `Stale` **Kalman Filter backward pass is using measurements twice without weights** (#3994)
  by @andiwand, updated on 2025-01-19

- ▶ 🔀 `Stale` **feat: Add/activate reverse filter cov inflation for KF and GSF** (#3996)
  by @benjaminhuth, ⚠️ **no reviewer**, updated on 2025-01-18

- ▶ 🔀 `WIP` `Stale` **feat: Marking Edgeholes during track finding** (#3988)
  by @pbutti, ⚠️ **no reviewer**, updated on 2025-01-17

- ▶ ⊙ `Stale` **Track EDM: Optimize dynamic columns in Vector backends** (#3864)
  by @paulgessinger, updated on 2025-01-17

- ▶ 🔀 `WIP` `Stale` **refactor!: Always return a magnetic field vector** (#3951)
  by @andiwand, ⚠️ **no reviewer**, updated on 2025-01-16

- ▶ 🔀 `WIP` `Stale` **refactor!: explicit constructors** (#3762)
  by @AJPfleger, ⚠️ **no reviewer**, updated on 2025-01-15

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

- ▶ ⑂ `Stale` **refactor!: Make nlohmann::json a public dependency** (#3954)
  by @paulgessinger, ⚠ **no reviewer**, updated on 2025-01-08

- ▶ ⊙ `Stale` **'Pythia8Generator' produces different results with multi-threading** (#3963)
  by @andiwand, updated on 2025-01-06

- ▶ ⑂ 🚧 **WIP** `Stale` **refactor: Bump min json ver, make json keys static** (#2968)
  by @paulgessinger, ⚠ **no reviewer**, updated on 2025-01-06

- ▶ ⑂ 🚧 **WIP** `Stale` **docs: Some accumulated docs fixes** (#3962)
  by @andiwand, ⚠ **no reviewer**, updated on 2025-01-05

- ▶ ⑂ 🚧 **WIP** `Stale` **feat: Adding efficiency vs production radius to output root files** (#3539)
  by @AichaMattouhi, ⚠ **no reviewer**, updated on 2025-01-05

- ▶ ⑂ `Stale` **feat: Adding G4Trap converter in Geant4Converters** (#3775)
  by @ldamenti, ⚠ **no reviewer**, updated on 2025-01-04

- ▶ ⑂ `Stale` **feat: Add 'noexcept' specifier to 'Acts::Any'** (#3743)
  by @benjaminhuth, ⚠ **no reviewer**, updated on 2025-01-04

- ▶ ⅄ Stale **chore: SonarCloud fixes, part 0** (#3942)
  by @asalzburger, ⚠ **no reviewer**, updated on 2025-01-04

- ▶ ⅄ Stale **feat: bump detray version, add material tracer** (#3755)
  by @asalzburger, ⚠ **no reviewer**, updated on 2025-01-03

- ▶ ⅄ 🚧 WIP Stale **perf: add 2d perf plots** (#3893)
  by @XiaocongAi, ⚠ **no reviewer**, updated on 2025-01-03

- ▶ ⊙ Stale **improvement: use Geant4 nuclear interactions in FATRAS** (#3939)
  by @AJPfleger, updated on 2025-01-02

- ▶ ⅄ 🚧 WIP Stale **refactor: avoid 'addWhiteboardAlias' in truth tracking examples** (#3936)
  by @AJPfleger, ⚠ **no reviewer**, updated on 2025-01-02

- ▶ ⅄ 🚧 WIP Stale **refactor: reduce complexity of highly nested blocks** (#3633)
  by @AJPfleger, ⚠ **no reviewer**, updated on 2025-01-01

- ▶ ⅄ 🚧 WIP Stale **refactor: Add helper for Transform inversion** (#3750)
  by @paulgessinger, ⚠ **no reviewer**, updated on 2025-01-01

▶ 🖁 **WIP** Stale **feat: Add GSF component momentum cut to stabilize fit** (#2661)
by @benjaminhuth, ⚠ **no reviewer**, updated on 2024-12-30

▶ 🖁 Stale **feat: traccc plugin (conversion)** (#3281)
by @fredevb, ⚠ **no reviewer**, updated on 2024-12-30

▶ 🖁 Stale **feat: traccc chain in examples (common chain logic and CPU chain)** (#3320)
by @fredevb, ⚠ **no reviewer**, updated on 2024-12-30

▶ 🖁 Stale **fix: detray plugin (cmake flags, CI, and compile errors)** (#3363)
by @fredevb, ⚠ **no reviewer**, updated on 2024-12-30

▶ 🖁 Stale **refactor: Lift GenericDetector to a Plugin** (#3425)
by @benjaminhuth, ⚠ **no reviewer**, updated on 2024-12-29

▶ 🖁 Stale **feat: traccc plugin refactor, traccc chain reconstruction only, and fixes** (#3505)
by @fredevb, ⚠ **no reviewer**, updated on 2024-12-29

▶ 🖁 Stale **feat: Add a fastjet plugin** (#3617)
by @gagnonlg, ⚠ **no reviewer**, updated on 2024-12-29

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

- ▶ ⟨⟩ **WIP** **Stale** **refactor!: Middle range strategy** (#3719)
  by @CarloVarni, ⚠ **no reviewer**, updated on 2024-12-28

- ▶ ⟨⟩ **WIP** **Stale** **refactor!: Seed Finders create collection of 'Seed<external_spacepoint_t>'
  instead of 'Seed<Proxy<external_spacepoint_t>>'** (#3729)
  by @CarloVarni, ⚠ **no reviewer**, updated on 2024-12-28

- ▶ ⊙ **Stale** **Avoid direct inversion of covariance matrices for numerical stability** (#3910)
  by @coderabbitai[bot], updated on 2024-12-26

- ▶ ⊙ **Stale** **nHoles different in KF and GX2F** (#3906)
  by @AJPfleger, updated on 2024-12-25

- ▶ ⊙ **Stale** **FLTUND in KF in physmon at 'PointwiseMaterialInteraction::covarianceContributions'**
  (#3890)
  by @AJPfleger, updated on 2024-12-22

- ▶ ⊙ **Stale** **'common' CMake preset requires ccache** (#3537)
  by @stephenswat, updated on 2024-12-21

- ▶ ⊙ **Stale** **GSF throws warnings regularly with ODD** (#3738)
  by @andiwand, updated on 2024-12-21

- ⊙ `Stale` **test: some bounding box test cases fail on macOS ci** (#3847)
  by @AJPfleger, updated on 2024-12-21

- ⊙ `Stale` **docs: Sphinx '>=7.4.0' breaks warning ignore script** (#3879)
  by @AJPfleger, updated on 2024-12-21

- ⊙ `Stale` **Gen3 geometry** (#3502)
  by @paulgessinger, updated on 2024-12-18

- ⊙ `Stale` **Potential Dangling Pointers in Function** (#3813)
  by @coderabbitai[bot], updated on 2024-12-05

- ⊙ `Stale` **Potential Dangling Pointers in 'createTree' Function** (#3814)
  by @coderabbitai[bot], updated on 2024-12-05

- ⟋ `WIP` `Stale` **feat: Add per event timing** (#3124)
  by @CouthuresJeremy, ⚠ **no reviewer**, updated on 2024-11-29

- ⟋ `WIP` `Stale` **feat: traccc cuda example** (#3372)
  by @fredevb, ⚠ **no reviewer**, updated on 2024-11-29

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

▶ � **WIP** Stale **build: physmon for traccc chains (host and cuda)** (#3403)
by @fredevb, ⚠ **no reviewer**, updated on 2024–11–29

▶ � **WIP** Stale **feat: Added possibility to keep intermediate particles from PythiaGenerator WIP** (#3414)
by @pbutti, ⚠ **no reviewer**, updated on 2024–11–29

▶ � **WIP** Stale **refactor: Move config files from ODD to Acts to ensure compatibility** (#3407)
by @benjaminhuth, ⚠ **no reviewer**, updated on 2024–11–29

▶ � **WIP** Stale **chore: Bump minimum boost version to 1.78.0** (#3517)
by @paulgessinger, ⚠ **no reviewer**, updated on 2024–11–29

▶ � **WIP** Stale **refactor: Detector Element refactoring proposal** (#3574)
by @benjaminhuth, ⚠ **no reviewer**, updated on 2024–11–29

▶ ⊙ Stale **bug: navigation suggests 'pathCorrection=inf' on cylinderSurface** (#3267)
by @AJPfleger, updated on 2024–10–31

▶ ⊙ Stale **Common shared measurement computation?** (#3618)
by @gagnonlg, updated on 2024–10–26

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

- ▶ ⊙ Stale **TrackAtVertex trackWeight is not being written in IVF** (#2149)
  by @andiwand, updated on 2024-09-27

- ▶ ⊙ Stale **Multiple context references are in flight for track fitters and finder** (#3383)
  by @andiwand, updated on 2024-09-27

- ▶ ⊙ Stale **'TrackStateType' is easy to get wrong** (#3439)
  by @andiwand, updated on 2024-09-26

- ▶ ⊙ Stale **Proposal: surface and portal navigation (including target surfaces) for Gen3** (#3526)
  by @asalzburger, updated on 2024-09-21

- ▶ ⊙ Stale **FPE: RootTrajectoryStatesWriter** (#2348)
  by @paulgessinger, updated on 2024-09-15

- ▶ ⊙ Stale **'GlobalChiSquareFitter' produces parameters in wrong volume** (#3444)
  by @andiwand, updated on 2024-09-05

- ▶ ⊙ Stale **Bug: _acts_dfelibs_version unset in CMakeLists.txt** (#3457)
  by @wdconinc, updated on 2024-09-05

- ▶ ⊙ Stale **Provide tools & setup for tracking of Heavy Ion on ITk events in standalone ACTS environment** (#1778)
  by @tboldagh, updated on 2024-07-24

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

- ▶ ⊙ Stale **[bug] Off axis endcap with dd4hep plugin.** (#942)
  by @whit2333, updated on 2024-06-26

- ▶ ⊙ Stale **Reproducibility test using hash checks for non-linear KF** (#1246)
  by @paulgessinger, updated on 2024-06-25

- ▶ ⊙ Stale **Documentation: hints for debugging** (#1463)
  by @timadye, updated on 2024-06-25

- ▶ ⊙ Stale **Add Primary Vertex Label to tracks** (#1544)
  by @Lucas-Borgna, updated on 2024-06-25

- ▶ ⊙ Stale **Create volume restricted BFieldMap** (#1659)
  by @asalzburger, updated on 2024-06-25

- ▶ ⊙ Stale **EstimateTrackParamsFromSeed does not use time of measurement** (#2136)
  by @andiwand, updated on 2024-06-25

- ▶ ⊙ Stale **Construct tracking geometry from python** (#2173)
  by @andiwand, updated on 2024-06-25

- ▶ ⊙ Stale **Missing `cmake_minimum_required` in `ActsConfig.cmake.in`** (#2216)
  by @andiwand, updated on 2024-06-25

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- ▶ ⊙ Stale **Bug: not all tracks have fittedMomentum** (#2364)
  by @felix-russo, updated on 2024-06-25

- ▶ ⊙ Stale **Bug: AMVF 'deleteLastVertex' might be wrong** (#2380)
  by @andiwand, updated on 2024-06-25

- ▶ ⊙ Stale **[Bug] Fatras can't seem to handle energy loss for electrons on thin surfaces** (#2498)
  by @janheinri, updated on 2024-06-25

- ▶ ⊙ Stale **[Feature Request] Padding utility for field map in case tracking volume is larger than a given field map** (#2523)
  by @janheinri, updated on 2024-06-25

- ▶ ⊙ Stale **Bug: Fatras sets step size to 0** (#2543)
  by @andiwand, updated on 2024-06-25

- ▶ ⊙ Stale **Ensure Fitters use all provided measurements** (#2737)
  by @andiwand, updated on 2024-06-25

- ▶ ⊙ Stale **bug: KF verbosity statement** (#3097)
  by @osbornjd, updated on 2024-06-20

- ▶ ⊙ Stale **EDM Memory usage** (#1516)
  by @paulgessinger, updated on 2024-05-25

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- ▶ ⊙ `Stale` **Detailed timing per event** (#1700)
  by @CouthuresJeremy, 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

- ▶ ⊙ `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

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- ▶ ⊙ 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

- ▶ ⊙ Stale **HepMC plugin looks incomplete** (#3050)
  by @andiwand, updated on 2024-04-26

- ▶ ⊙ Stale **'EigenStepper' (and extensions) cannot be easily extended for dense environment covariance transport** (#2868)
  by @andiwand, updated on 2024-03-20

- ▶ ⊙ 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

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- ▶ ⊙ 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

- ▶ ⊙ 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 **'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

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- ▶ ⊙ 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-Heithler gamma_distribution** (#2346)
  by @paulgessinger, updated on 2023-09-03

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- ▶ ⊙ Stale **FPE: GaussianMixtureReduction** (#2347)
  by @paulgessinger, updated on 2023-09-03

- ▶ ⊙ 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 lxplus** (#1819)
  by @CarloVarni, updated on 2023-05-09

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- ▶ ⊙ 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 **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: Unpredicatable 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

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- ▶ ⊙ Stale **Documentation update: How-to (core)** (#1422)
  by @paulgessinger, updated on 2022-11-23

- ▶ ⊙ 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 **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 **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

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- ⊙ Stale **Bug: issue on first build after DD4hep update on system with globaly installed acts** (#1139)
  by @gagnonlg, updated on 2022-02-22

- ⊙ 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