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AIDA-2020

Advanced European Infrastructures for Detectors at Accelerators

Presentation

AZALEA Telescope (D15.1): usage and plans for Y5

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Common Beam Telescopes 2025

- **Baseline: EUDET-type telescopes + AIDA2020 upgrades (WP5)**
  - Full package for the users: >99% eff. sensors ↔ TDAQ ↔ reconstruction SW
  - 50 µm thin sensor suitable for > ~1 GeV/c beam lines
  - Active area < 2x1 cm^2 & Pointing resolution: > 1.8 µm (Miomsa26 limits)
  - Avg. trigger rate < 1MHz & Time resolution: > 781 ps (AIDA TLU limits)
- **Wishes and dreams:** "Highest spatial and time resolution we can get, without noise, and as little material budget as possible", and
  - Flexible sensor read-out: “full speed” or “full occupancy” (cw vs. bunch)
  - Large active area and region-of-interest-trigger option
  - Modern mechanics: Small sensor housings (“fingers”), robotic downstream arm, automatic movable planes…
  - Extend infrastructure: Common DAQ board for easy DUT integration
  - Single particle momentum/energy measurement by a magnet
  - Online data processing (clustering, …) to online track finding (“Camera”)

→ For sure: A future reference tracker needs O(ps) time resolution.