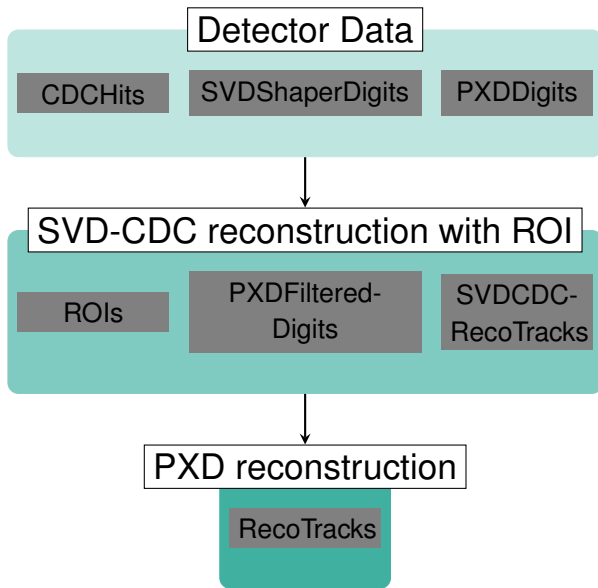


how to run a tracking reconstruction
suiting all your needs

FROM DATA TO PHYSICS

03.02.2018

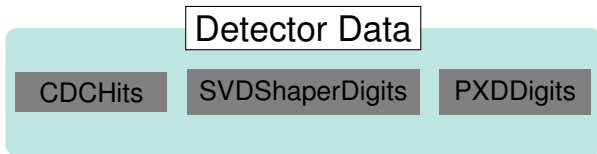
Nils Braun | IETP - KIT



from simulation
or raw data
unpacking

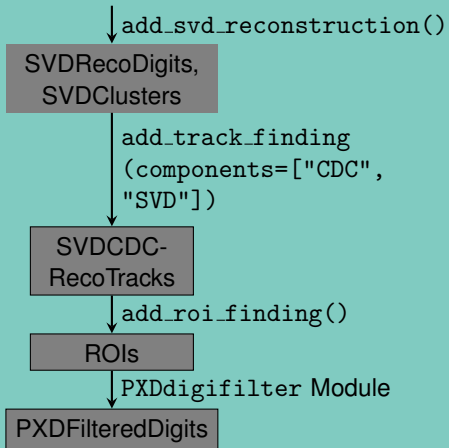
will run on HLT

will run offline



- Using `PXDDigits` here as the store array name, as this is more in line with the rest of the store array names. Filtering should be the "advanced" step and not the default.
- All three are produced by the unpackers.
- On HLT, `PXDDigits` are of course not present.

SVD-CDC reconstruction with ROI

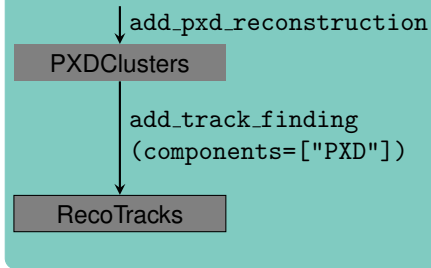


SVD-CDC reconstruction with ROI



- Instead of track finding, one could also use ckf based track finding (will soon be the same).
- Attention: using the MC track finder with PXD hits is not possible at this stage!
- However, it is still possible to use the truth information in the tracking stack (e.g. in filters in the CKF), as they do not need PXD (by definition).
- In offline reconstruction, the ROI part is not needed (but may be quite interesting).

PXD reconstruction



- Before (or after) running the PXD tracking, it is now possible to add PXD MC track finding.
- Using data reduction or not is just a change in which PXD digits to use in the pxd reconstruction.
- Still it is not (and will never be) possible to run MC track finding without data reduction and track finding with.

OTHER MODES

MC TF This just replaces the whole stack. No PXD data reduction is needed. The SVD and PXD reconstruction can be called before.

MC TF on filtered PXD hits Same stack as described, just without PXD reconstruction and a full MC track finding in the end.

Simulation Same stack. MC TF in the end with matching.

Full HLT Simulation Still possible with full HLT simulation. Just ran online and offline stack twice (but it is not needed anymore!).

Single detector modes The TFs are "smart enough" to handle this internally.

6-layer VXDTF2 Just replace the PXD tracking with 6-layer VXDTF2 and a proper merging procedure outputting into RecoTracks.

ACTION ITEMS

- Pull ROI finding from simulation into reconstruction.
- Reorder `add_track_finding` and `add_ckf_based_track_finding`.
- Better put the SVD and PXD reconstruction into the track-finding convenience functions (instead of the full tracking reconstruction).