Karlsruher Institut für Technologie

weekly meeting 2017

PXD CKF IN RELEASE-01-00

23.11.2017

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NOTES

Event samples

All presented results are calculated with $\Upsilon(4S)$ events using Background Mixer samples of campaign 15. I used the current `release/01-00` branch.

No comparison

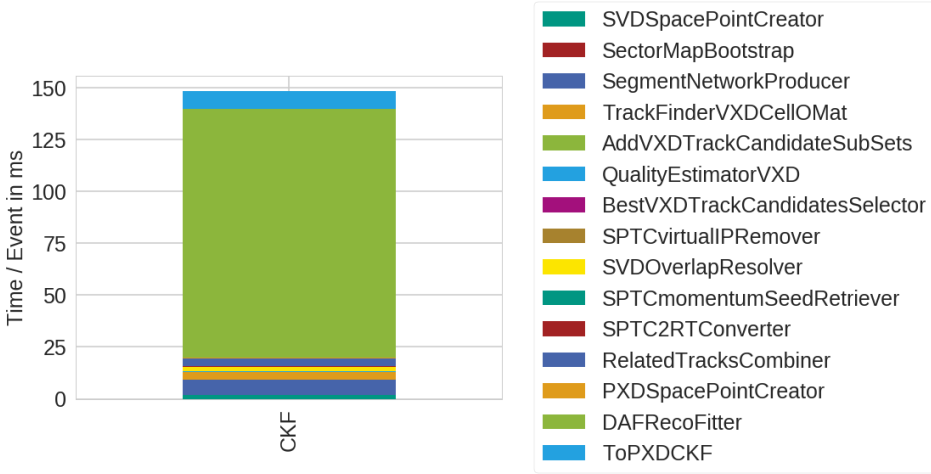
As the VXDTF2 is not able to find any meaningful PXD hits anymore, I can not give a comparison, but just the rough numbers

RESULTS

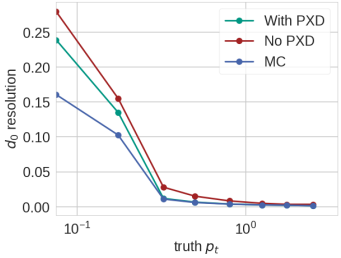
	CKF (MC)	CKF	no PXD
pxd hit efficiency (prim)	0.8818	0.8089	-
pxd hit efficiency (all)	0.8722	0.7960	-
pxd hit purity	1.0000	0.8647	-
finding efficiency (prim)	0.9525	0.9476	0.9527
fake rate	0.0508	0.0572	0.0514
clone rate	0.1101	0.1084	0.1189

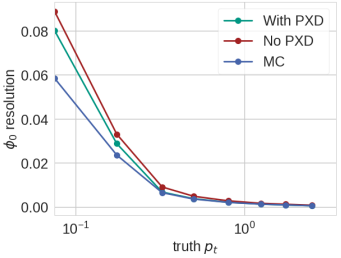
- Merge decay is set to false.
- The result is a compromise between hit efficiency and hit purity.
- In contrast to VXDTF2: PXD numbers are (nearly) independent from the other FOM.

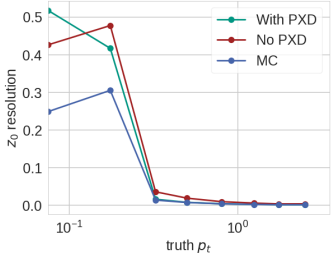
RUNTIME

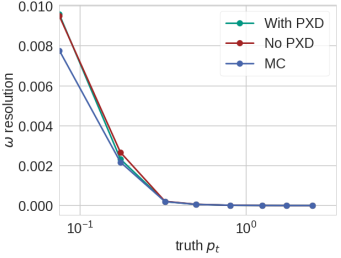

Time / Event in ms
150
125
100
75
50
25
0
CKF
SVDSpacePointCreator
SectorMapBootstrap
SegmentNetworkProducer
TrackFinderVXDCellOMat
AddVXDTrackCandidateSubSets
QualityEstimatorVXD
BestVXDTrackCandidatesSelector
SPTCvirtualIPRemover
SVDOverlapResolver
SPTCmomentumSeedRetriever
SPTC2RTConverter
RelatedTracksCombiner
PXDSpacePointCreator
DAFRecoFitter
ToPXDCKF

RESOLUTIONS

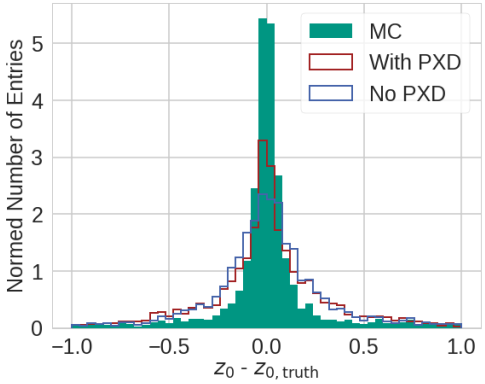




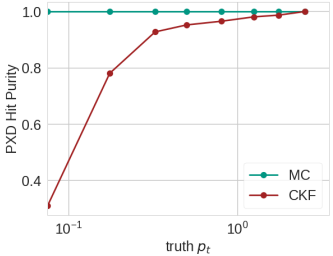


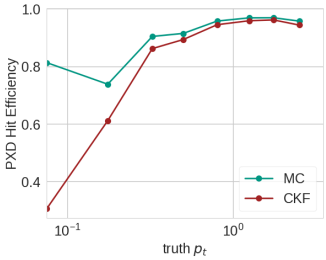


TRYING TO UNDERSTAND

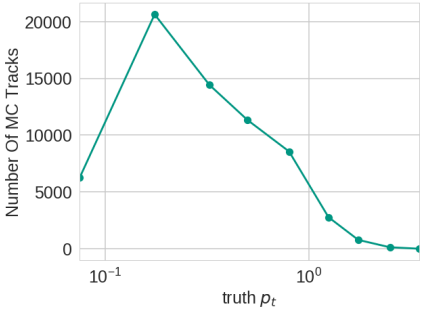


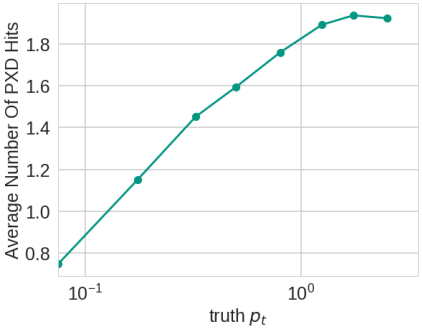
truth p_t in [0.05, 0.1] GeV





ALWAYS KEEP IN MIND





OUTLOOK

- I will show revised results on F2F in Pisa.
- Runtime of the module is fine (I fixed a bug on master and on release branch this week).
- Looking at MC, there is still more to be achieved...
- Results will get better, once a new merger is in use.
- Question: up to which point in time are optimization fixes for the release possible?