Brief update on BX assignement

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MBTF working meeting
PD, 17 April 2014

IMPORTANT!

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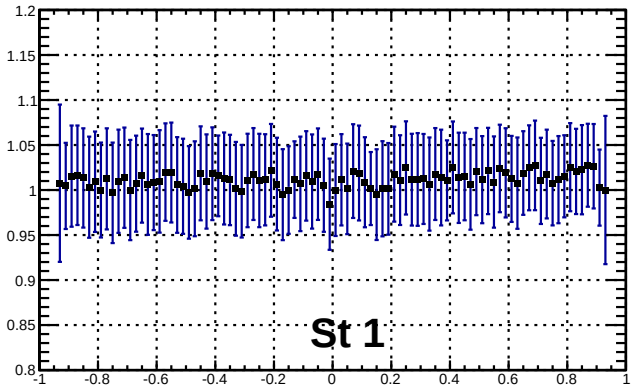
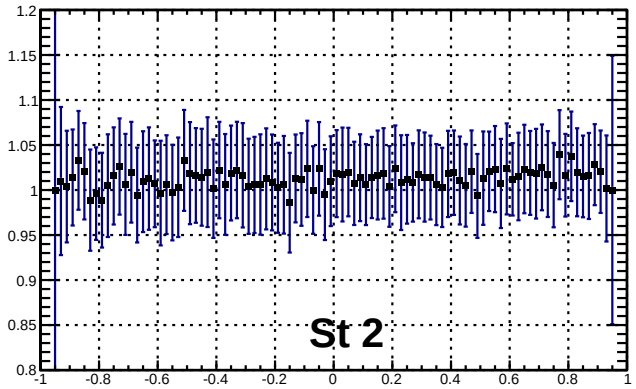
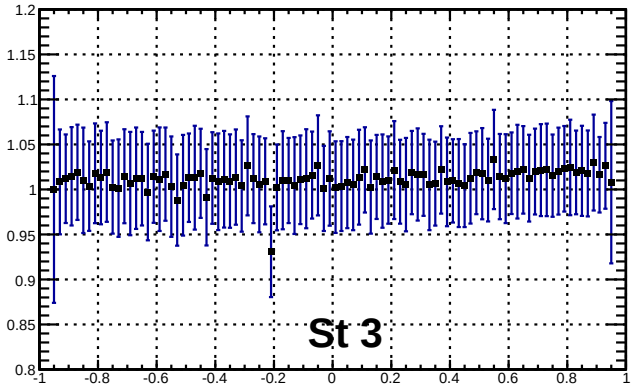
During the MBTF Working Meeting, CERN, 6 March 2014, I presented some results on the L1 primitive efficiencies. Meeting on INDICO
After the meeting, and following the discussion, I've re-check my code, and realized that I was treating in a silly way the case when more than a L1 Primitive was present in a chamber, simply taking the last one. following the order in which they were stored in the ProuductContainer.
I've changed the code in order to get the one with highest quality instead, and I found that this makes quite a lot of difference.
In particular, the efficiency drop I saw before is not there anymore, instead I do see a **increase** of efficiency of few %
In the following, I've redone the plots I've presented at the meeting with this issue fixed, changing the comments accordingly (marked by **NEW**)

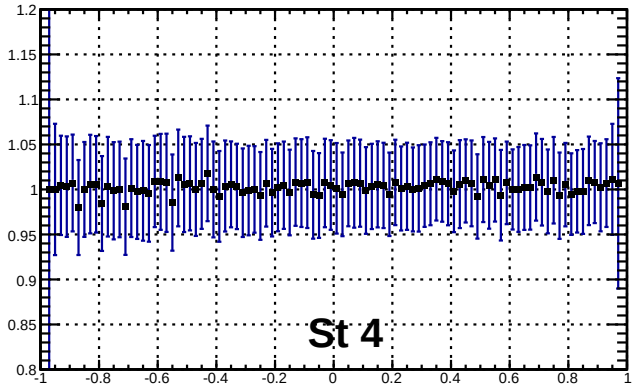
Efficiency vs Chamber position X by Station

New/Legacy NEW Some % of better ϵ from Legacy to New





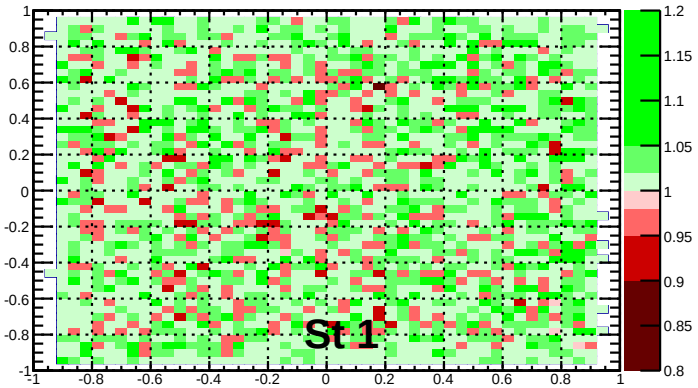


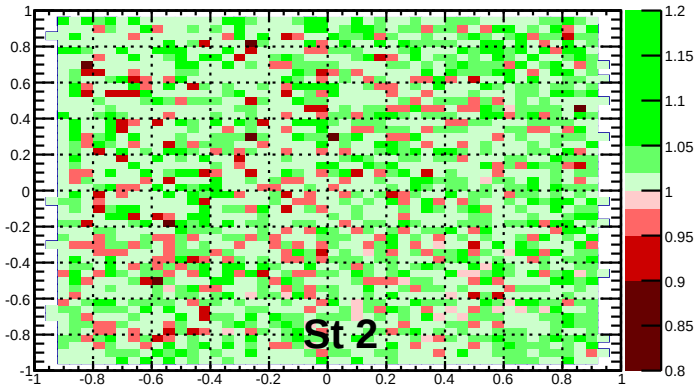


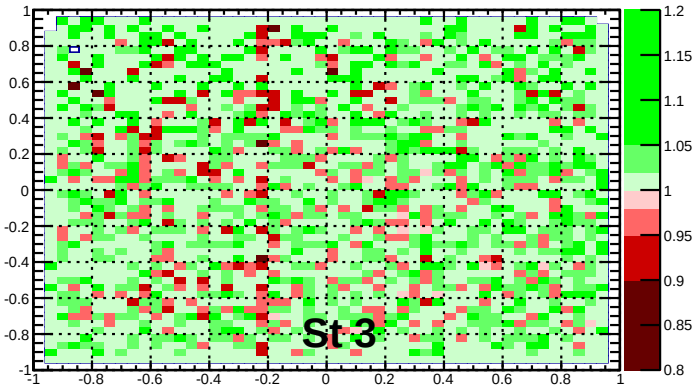
NEW funny drop at $x = -0.2$ for St3

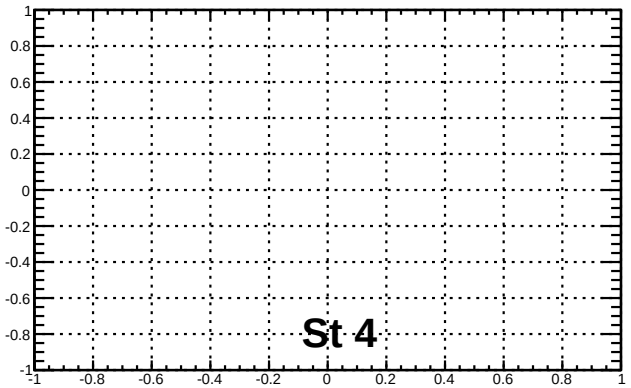
Efficiency vs Chamber position Y vs X by Station

New/Legacy NEW funny drop at $x = -0.2$ for St3 not localized in Y

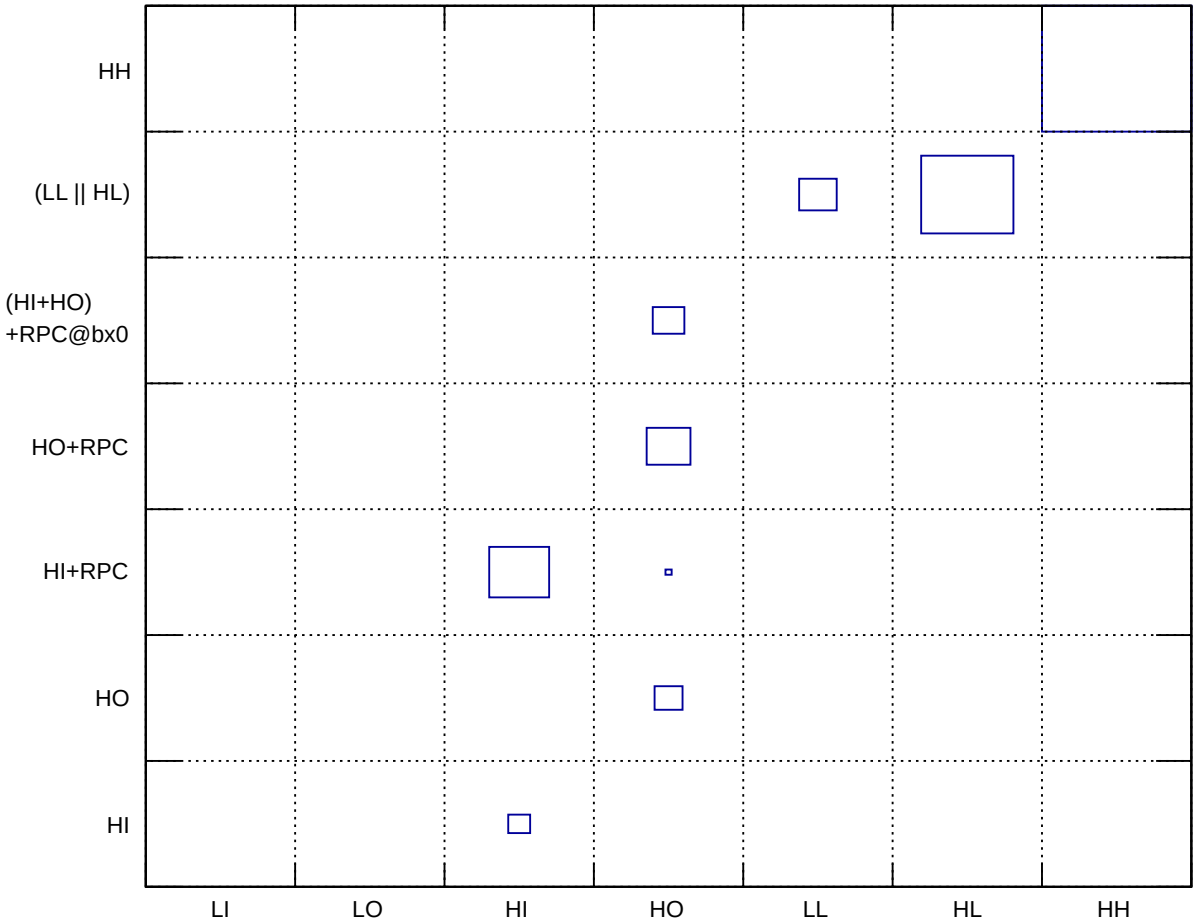








Quality code New vs Legacy



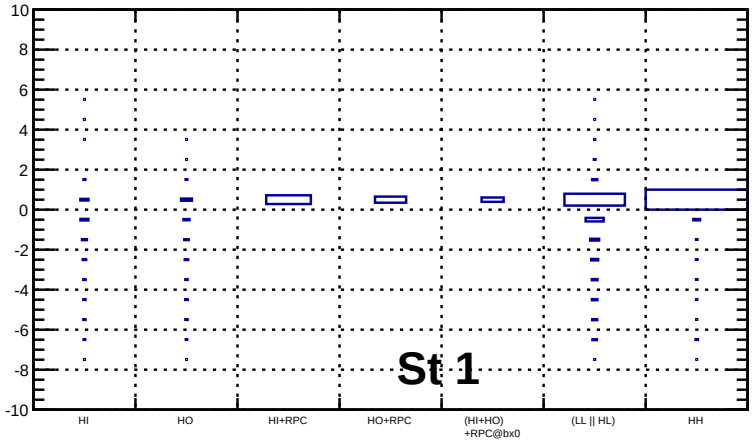
- Similar for all station/wheel;
- HO sometimes (seldom) becomes HI+RPC
- (HI+HO)+RPC@bx0 come only from legacy HO, and not from HI

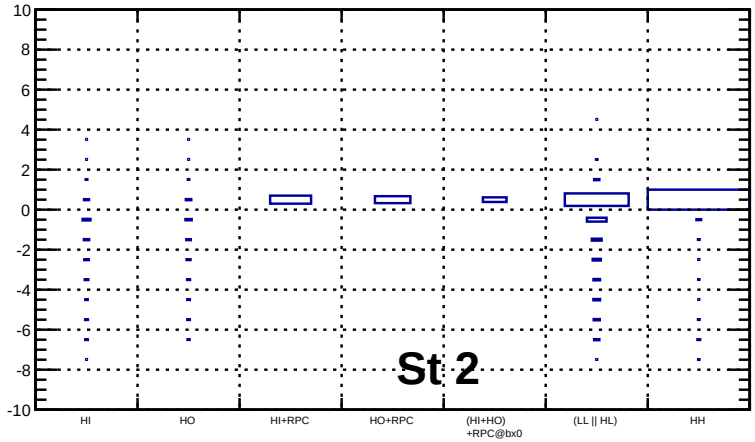
NEW with the proper choice of primitive when more than one is present

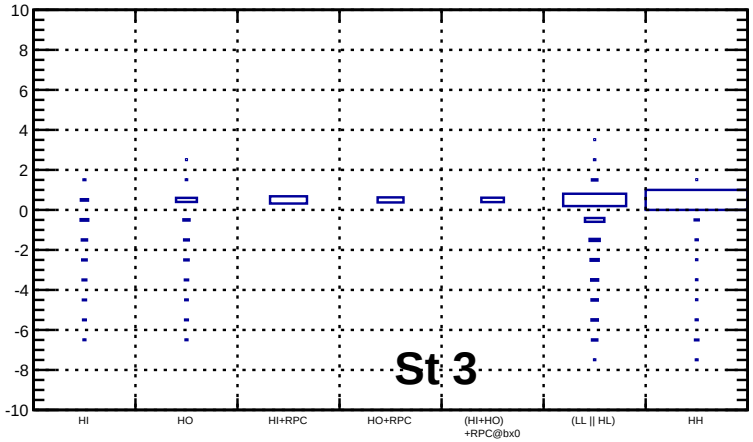
Summary

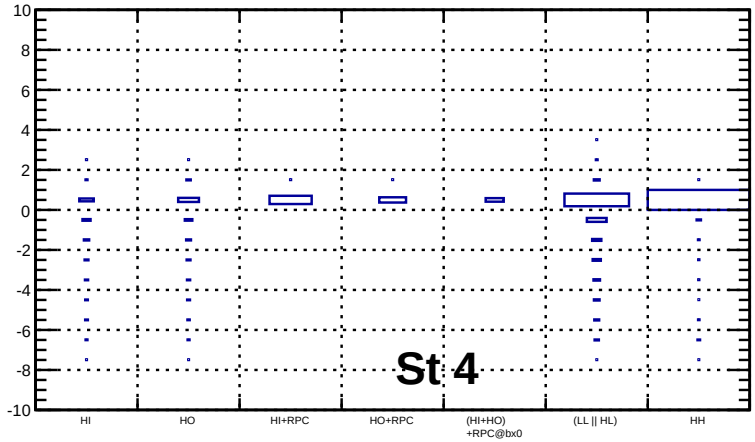
- Infrastructure for detailed efficiency study is in place
- **NEW** Choosing the best Primitives when more than one is present in a chamber makes a lot of difference
- Overall, the New Primitives behaves as expected;
- ~~There is a drop of efficiency at the level of few %~~;
  NEW There is an **INCREASE** of efficiency at the level of few %;
- Something odd in Wheel=0 for nSL=1;
- **RPC usage**:
  - good for HI for all station and for HO only for station 1 and 2
  - at chamber edge many new superprimitives are HI+RPC, almost none HO+RPC
- ~~Some strange migration of quality code from Legacy to New Primitives~~ **NEW** All is fine

Possible improvement on bx



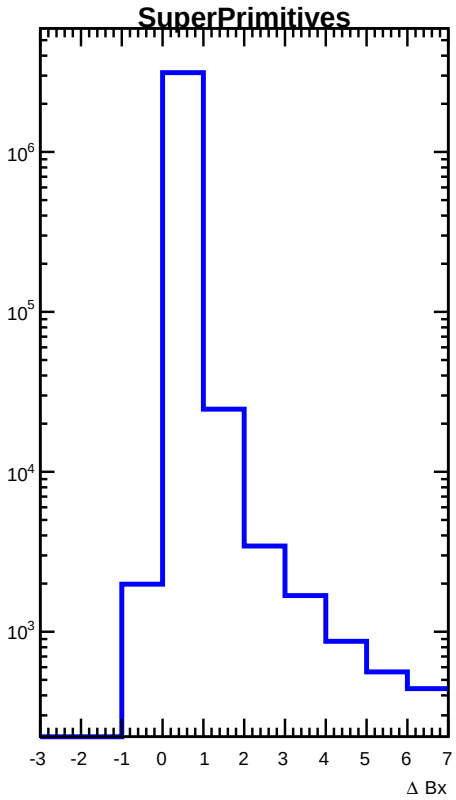


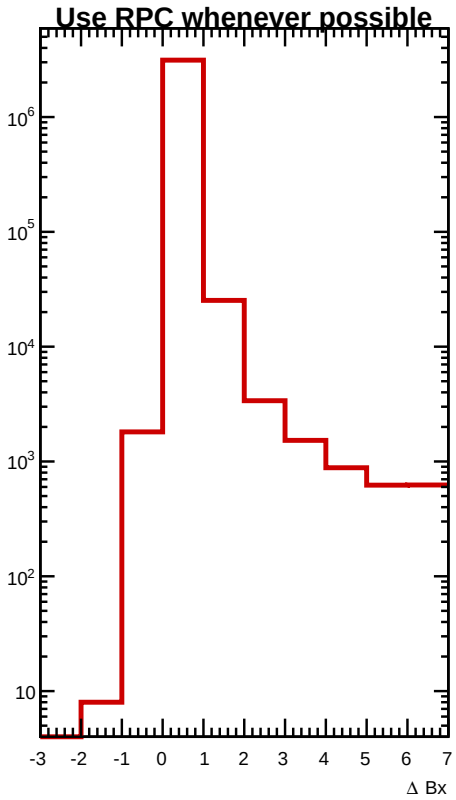


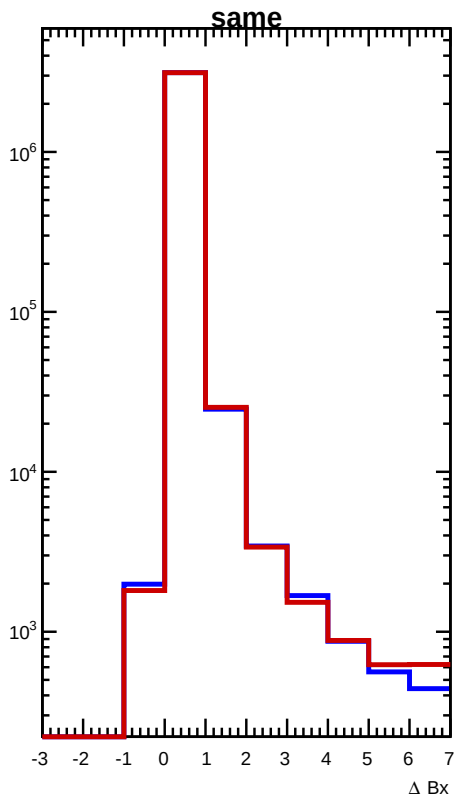


Bx vs DT quality code (superprimitives)

deltaBxDtRpc

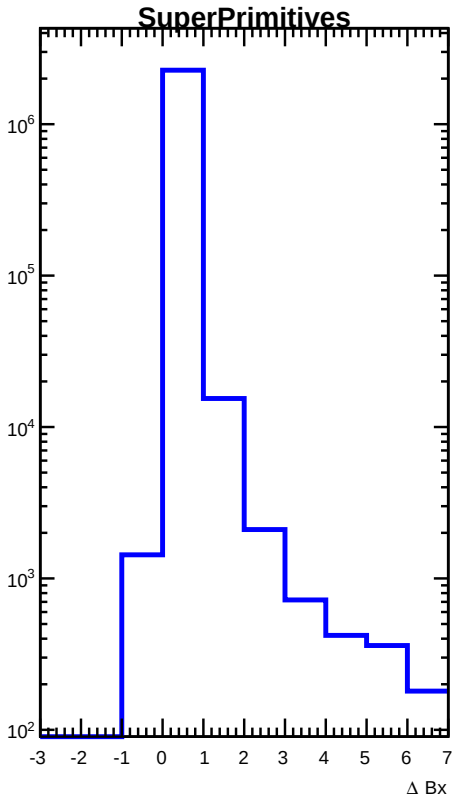


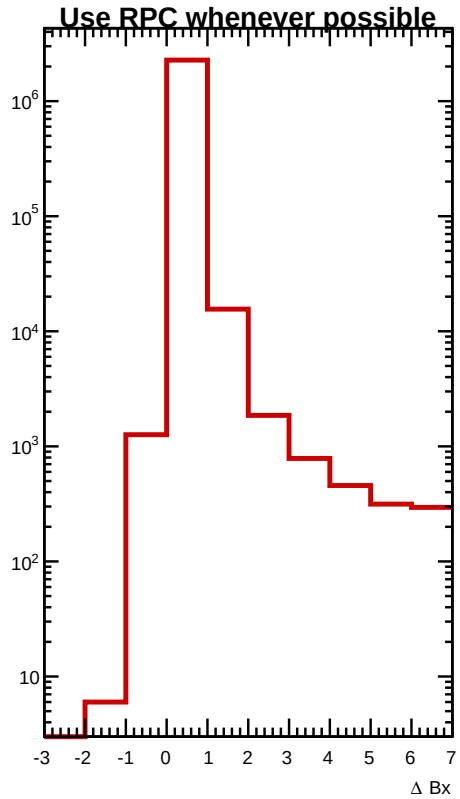


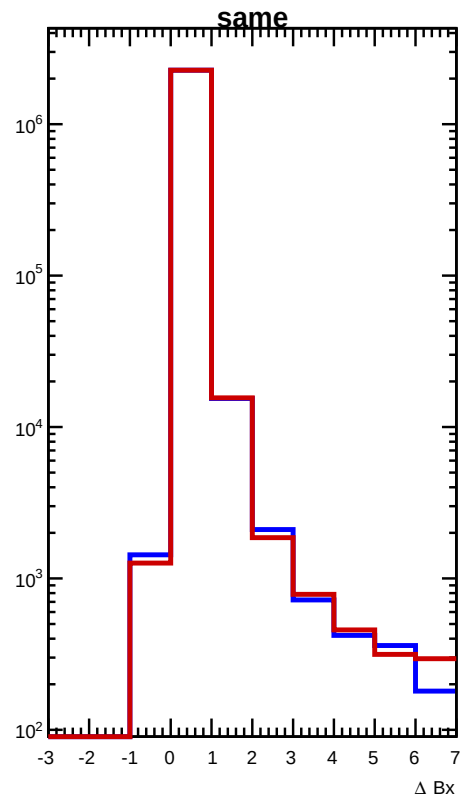


DeltaBx : DTPrimitive - closest (in DeltaPhi) RPCIn hit (if any) ; DTPrimitive - closest (in DeltaPhi) RPCOut hit (if any)

deltaBxDtRpcIn

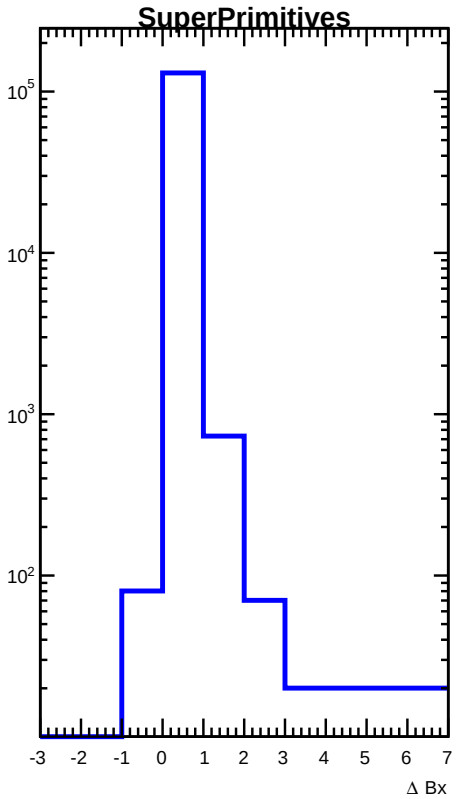


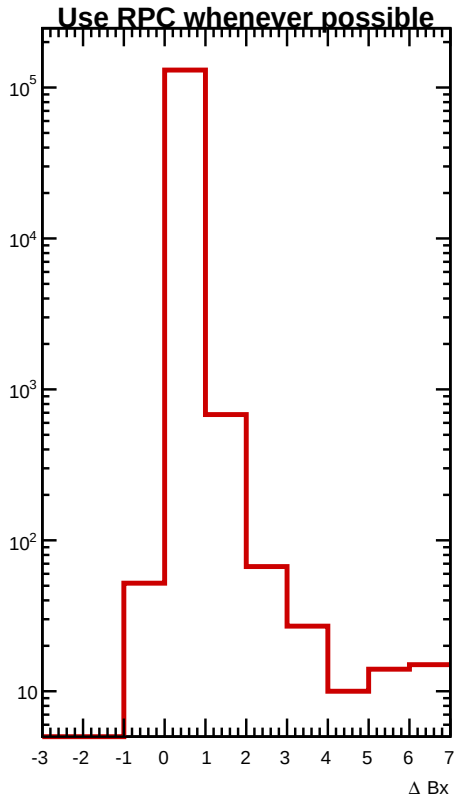


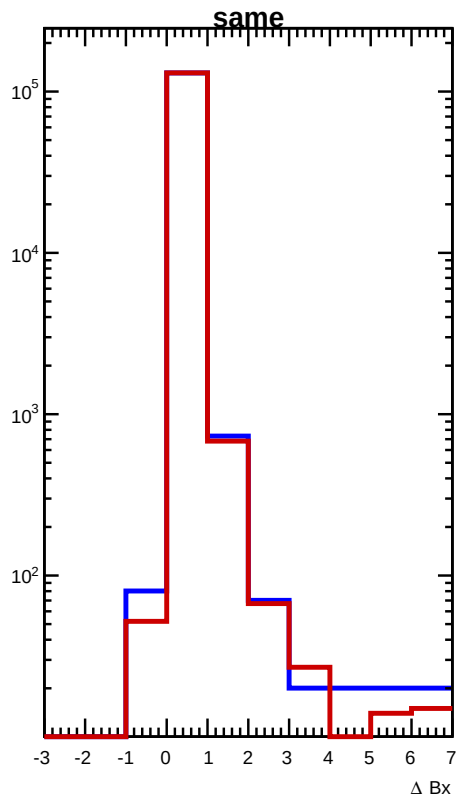


DeltaBx : DTPrimitive - closest (in DeltaPhi) RPCIn hit (if any) ;

deltaBxDtRpcOut

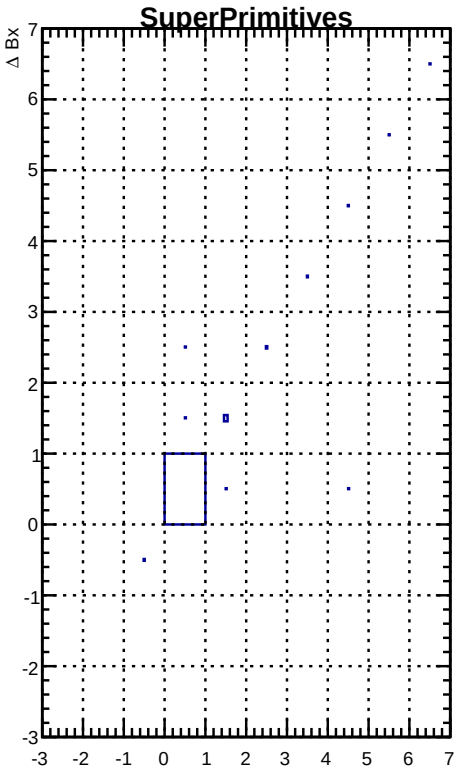


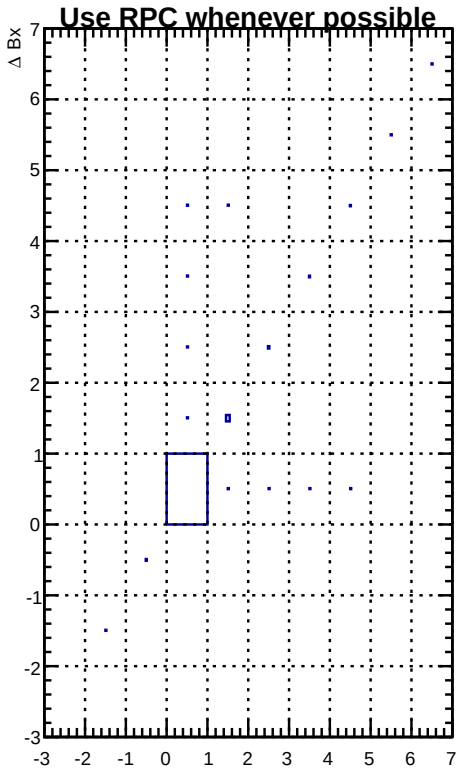


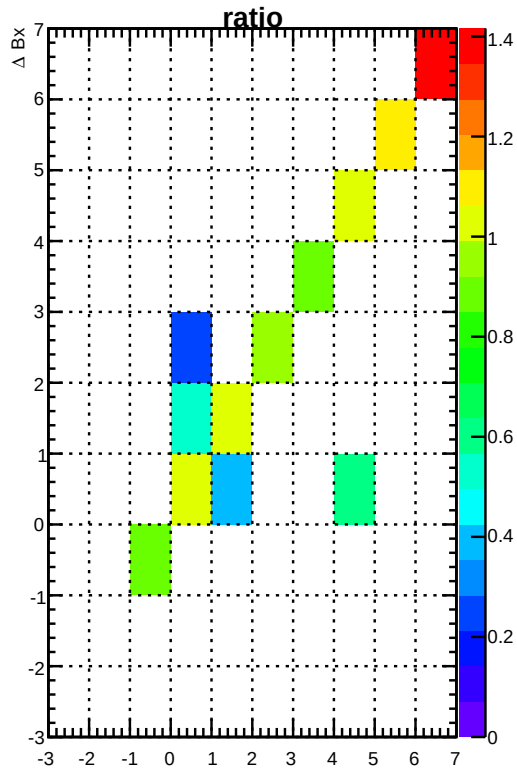


DTPrimitive - closest (in DeltaPhi) RPCOut hit (if any)

deltaBxDtRpcInVsOut

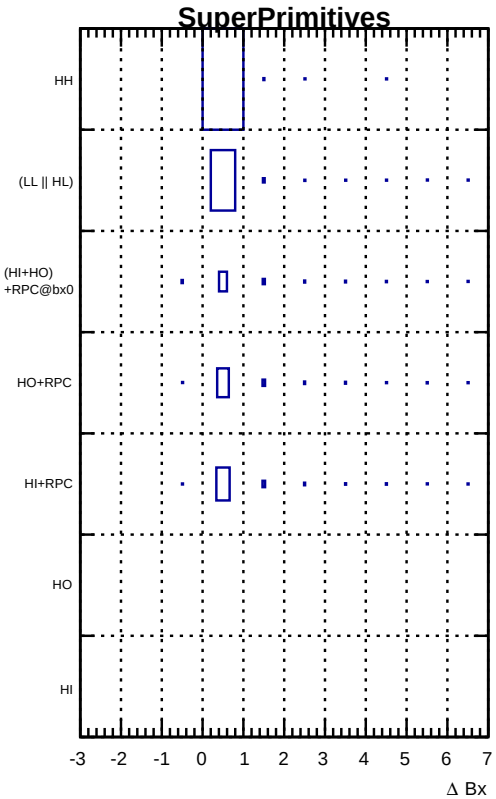


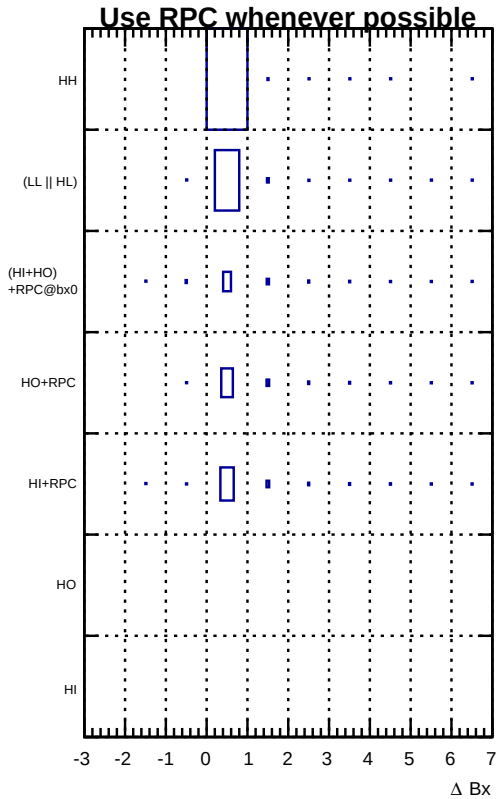


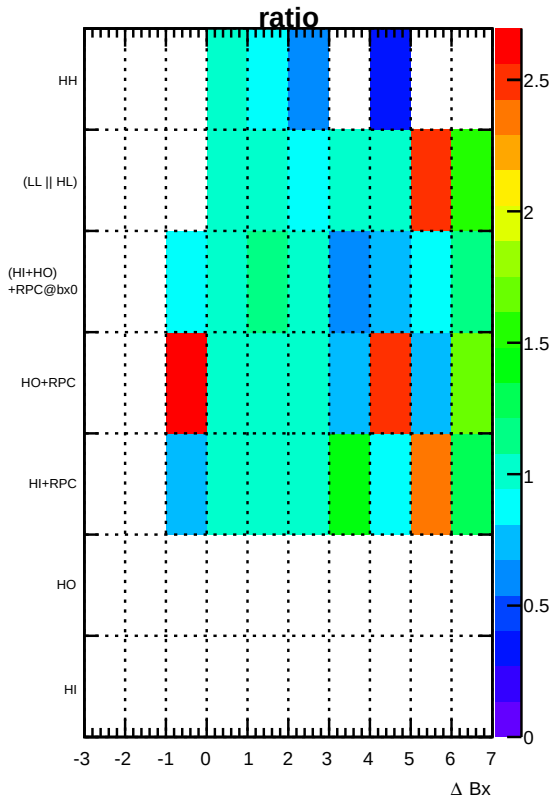


deltaBxDtRpcIn vs deltaBxDtRpcOut per each confirmed DT

deltaBxDtRpcInOutVsDtQuality

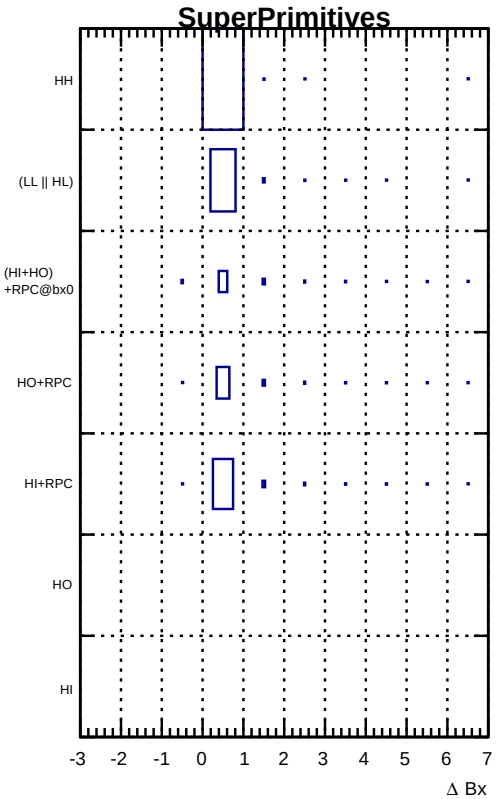


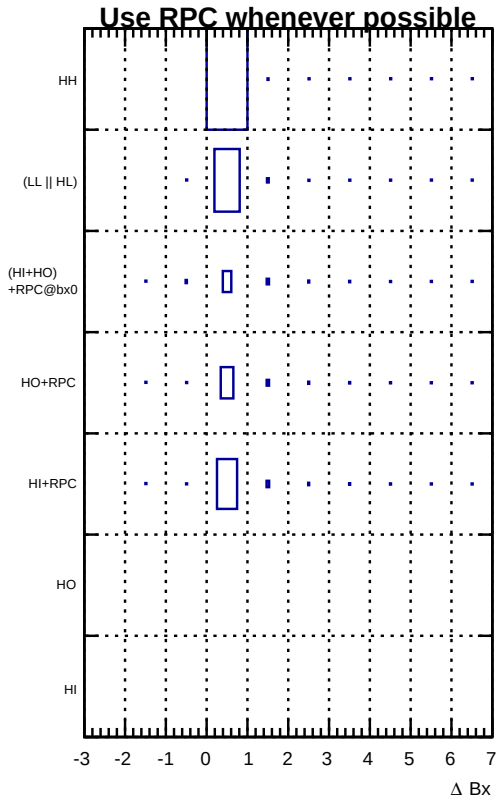


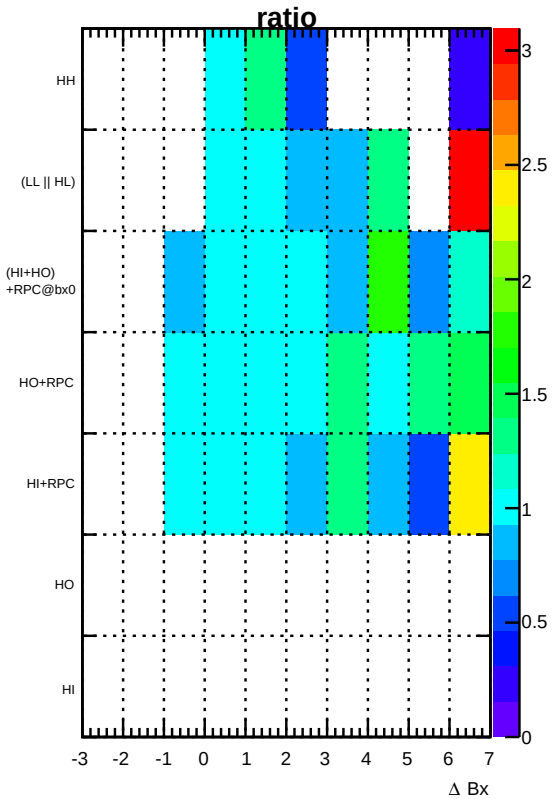


deltaBxDtRpc vs DT Primitive quality

deltaBxDtRpcInVsDtQuality

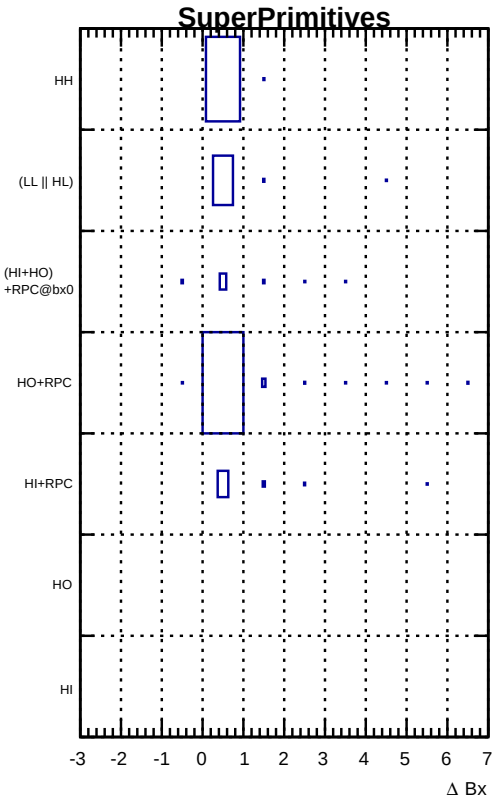


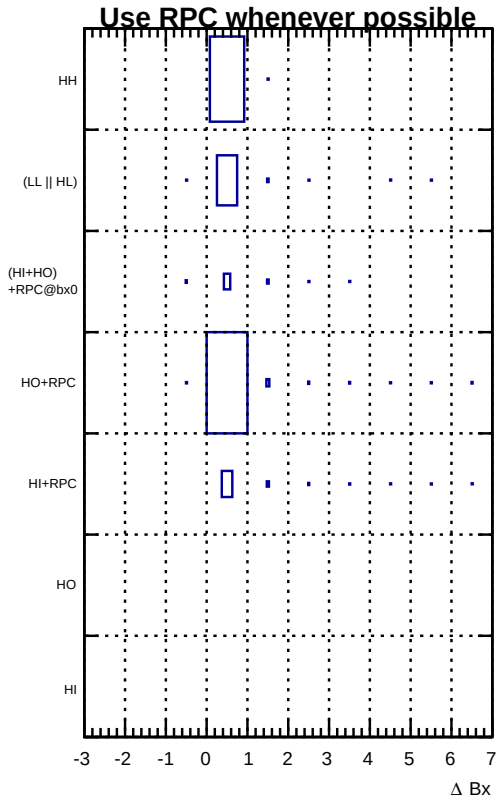


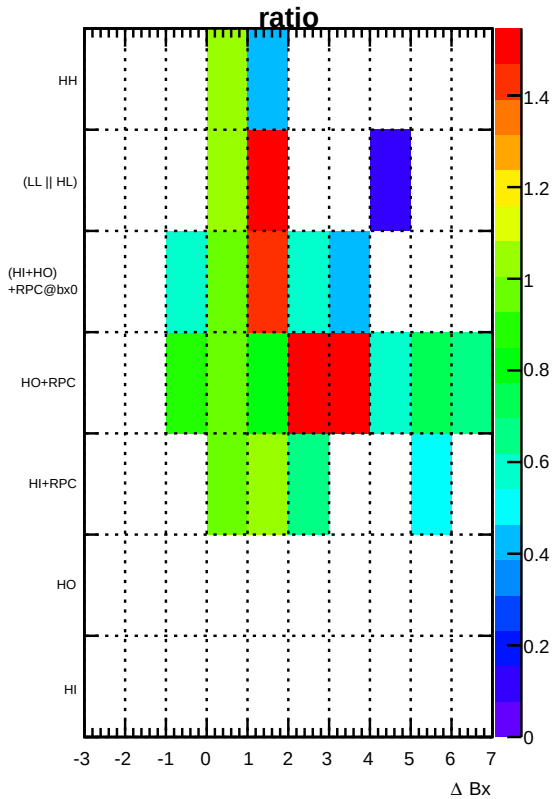


deltaBxDtRpc In vs DT Primitive quality

deltaBxDtRpcOutVsDtQuality

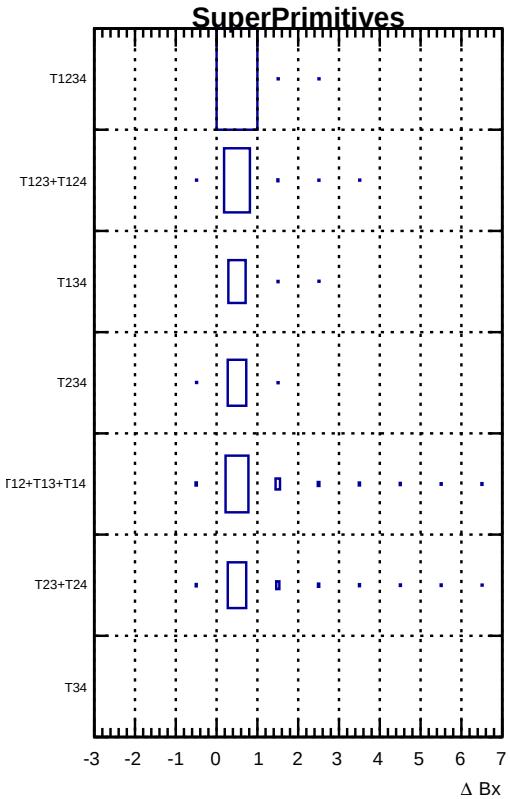


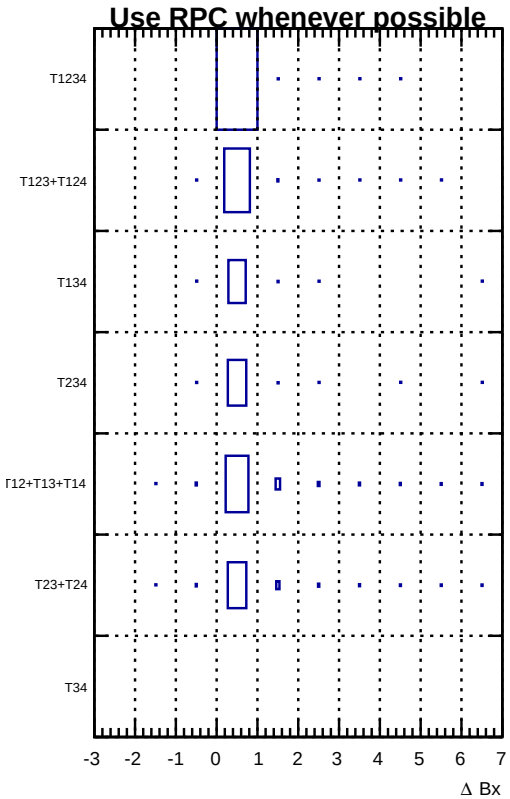


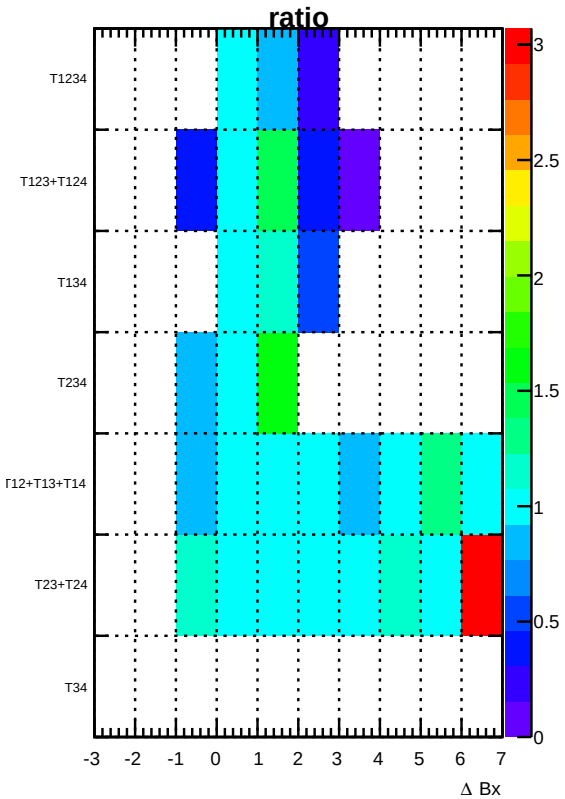


deltaBxDtRpc Out vs DT Primitive quality

deltaBxDtRpcInOutVsDttfQuality

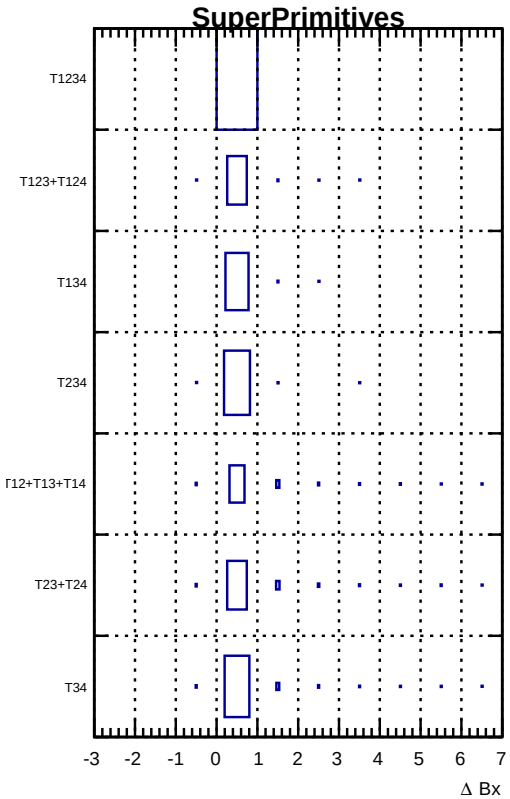


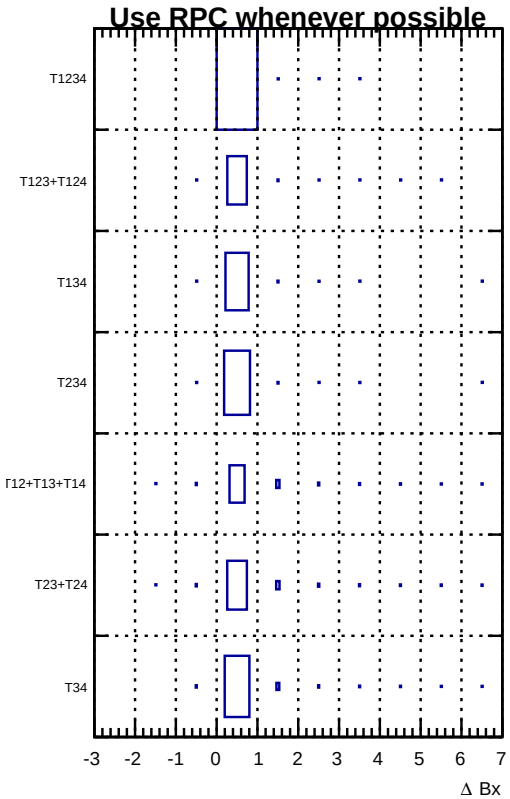


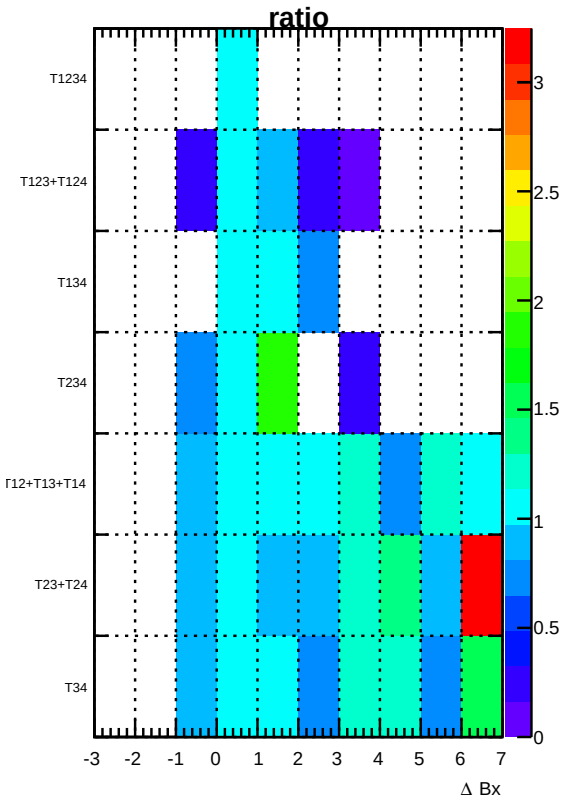


deltaBxDtRpc vs DTTF quality

deltaBxDtRpcInVsDttfQuality

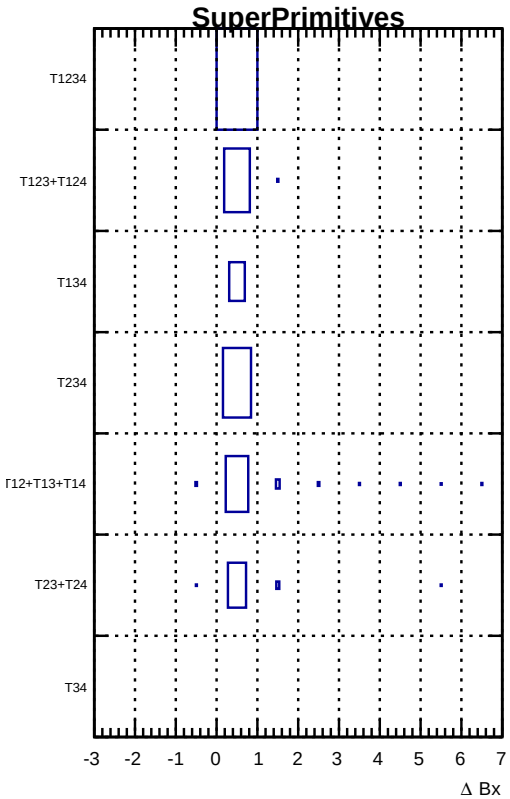


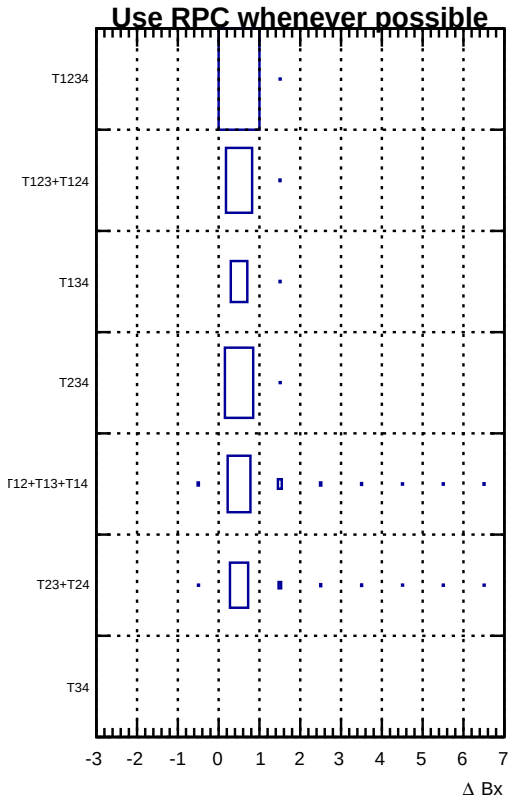


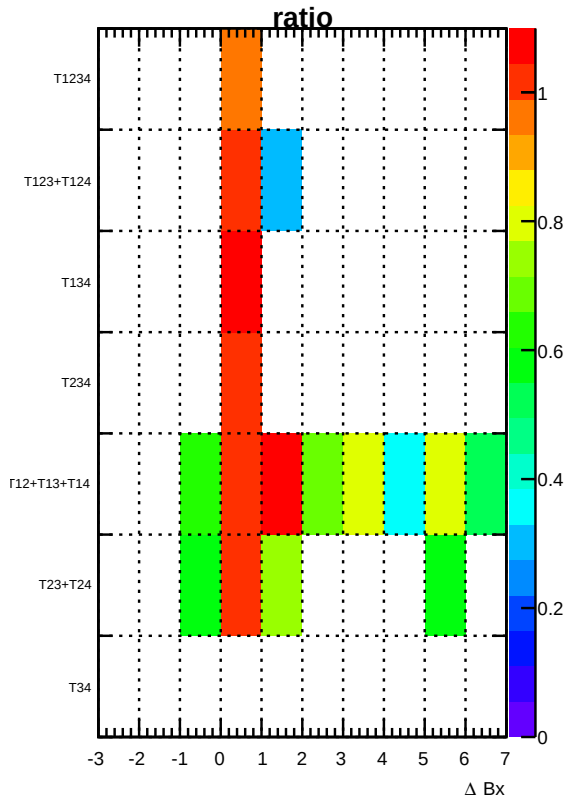


deltaBxDtRpc In vs DT Primitive quality

deltaBxDtRpcOutVsDttfQuality

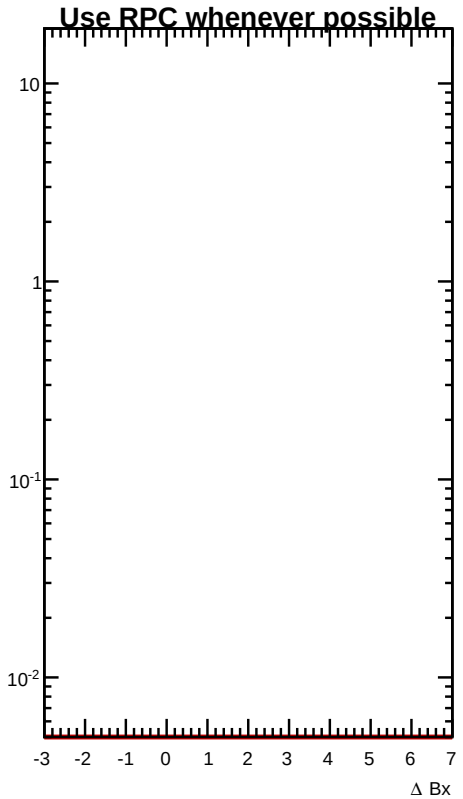






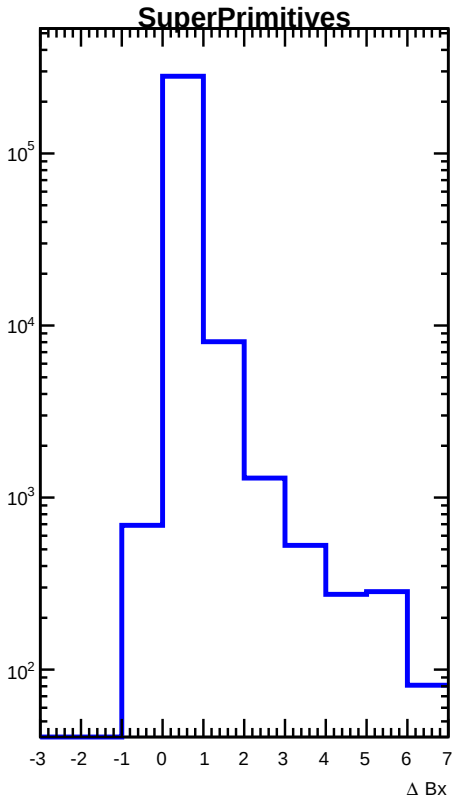
deltaBxDtRpc Out vs DT Primitive quality

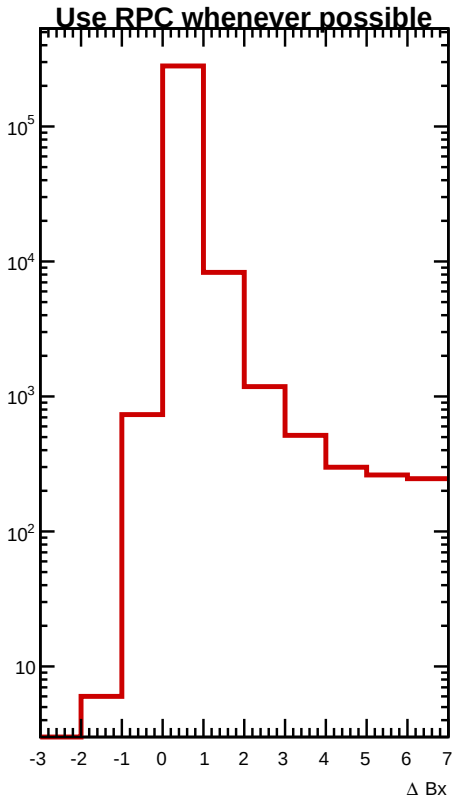
deltaBxRpc dttf1

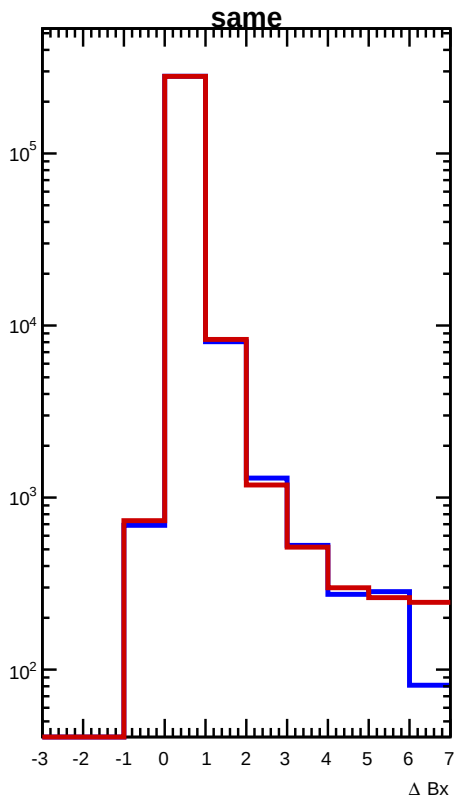


deltaBxDtRpc for T34

deltaBxRpc dttf2

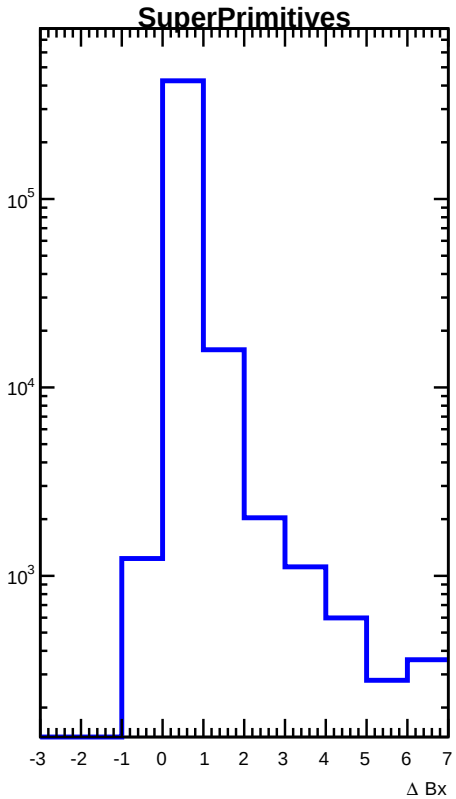


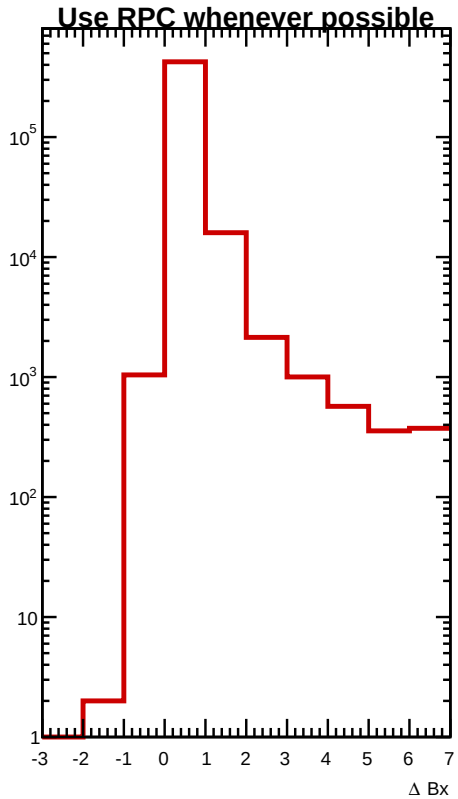


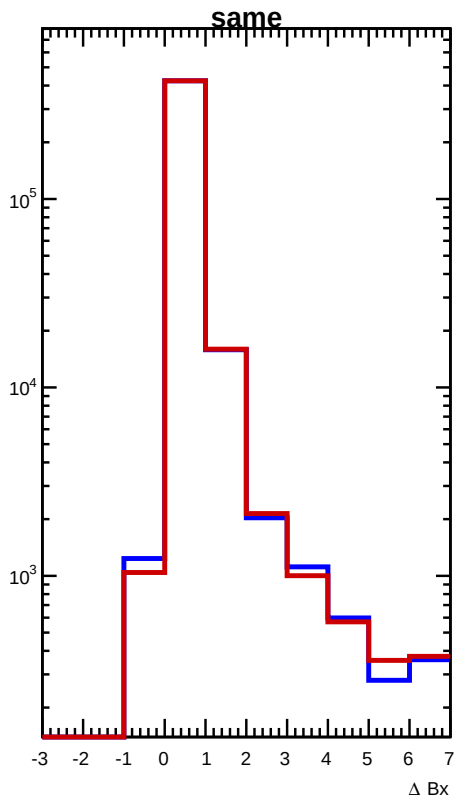


deltaBxDtRpc for T23+T24

deltaBxRpc dttf3

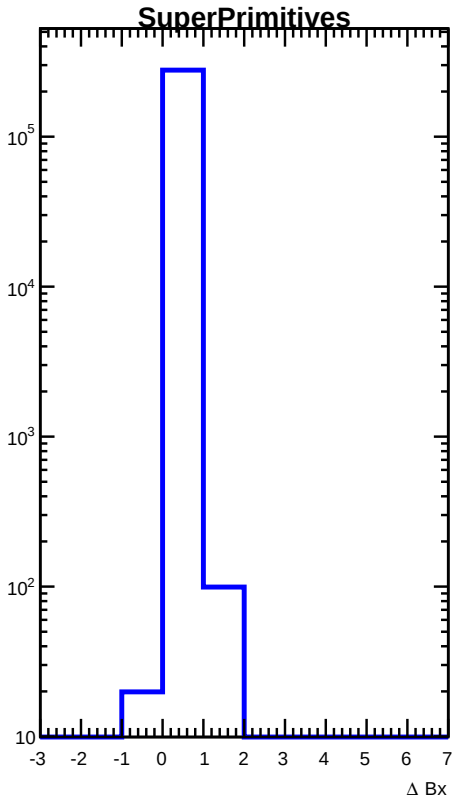


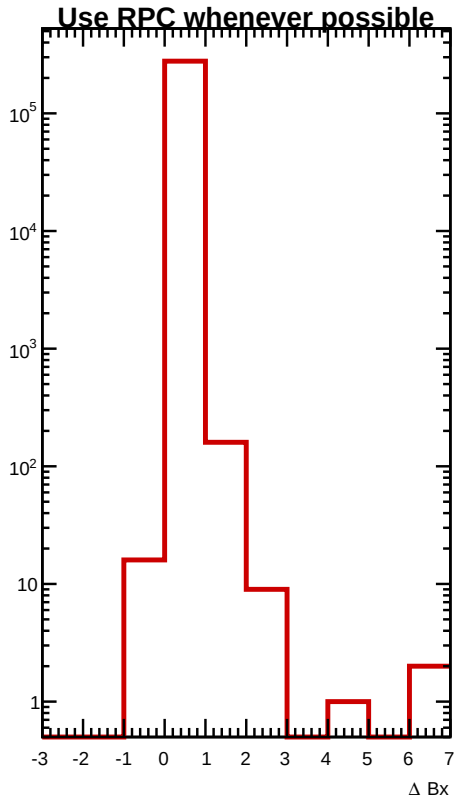


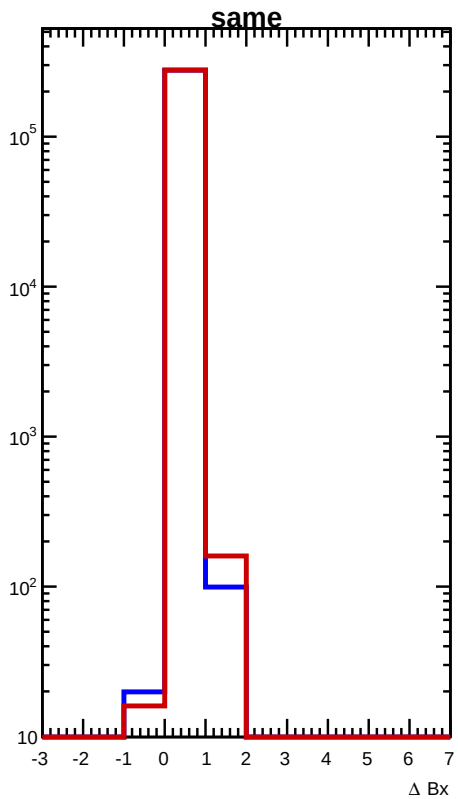


deltaBxDtRpc for T12+T13+T14

deltaBxRpc dttf4

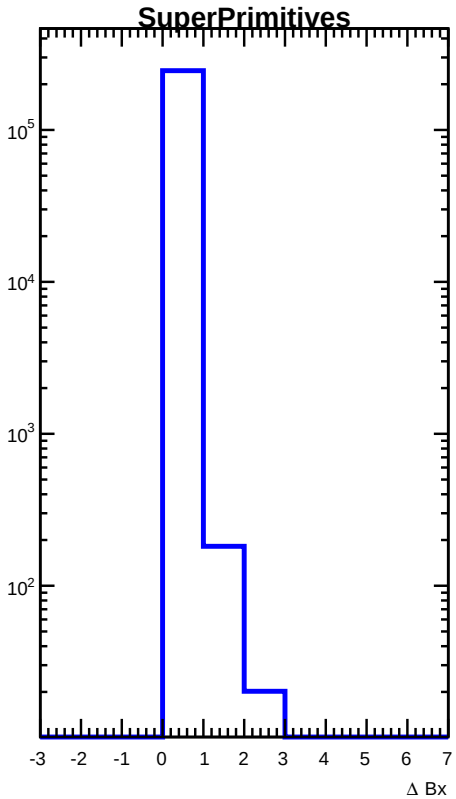


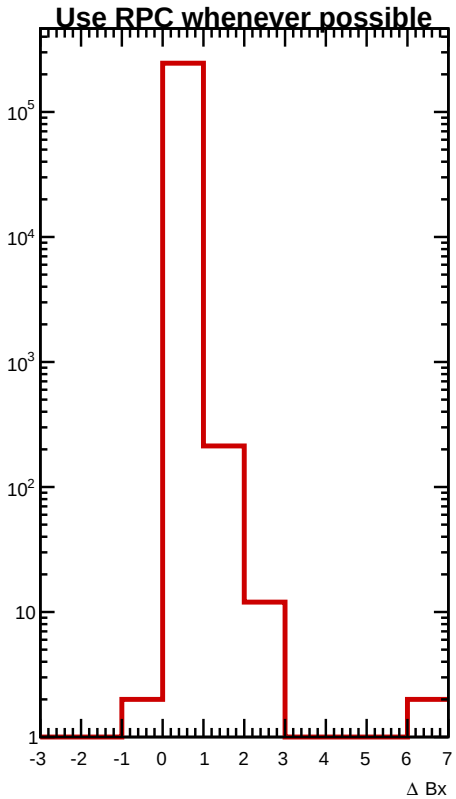


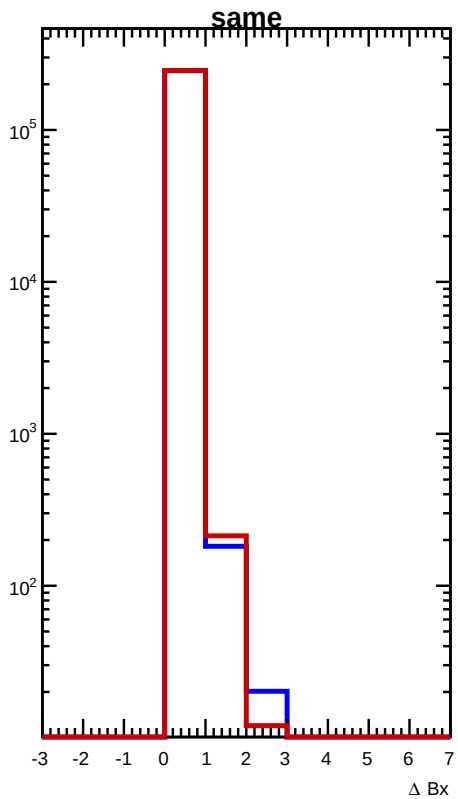


deltaBxDtRpc for T234

deltaBxRpc dttf5

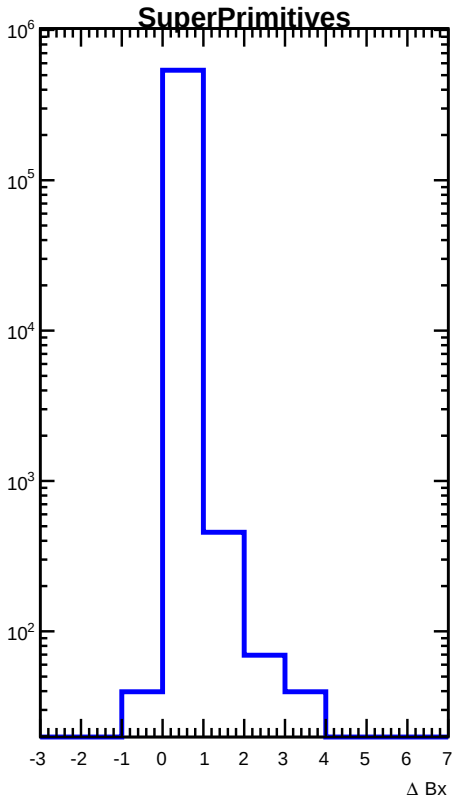


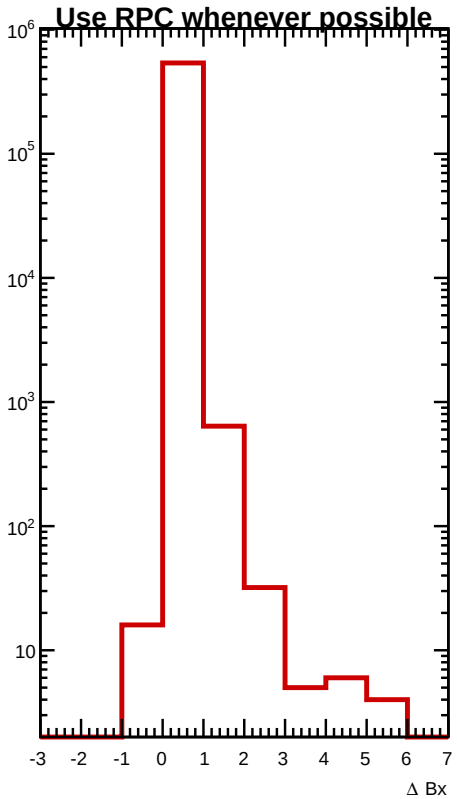


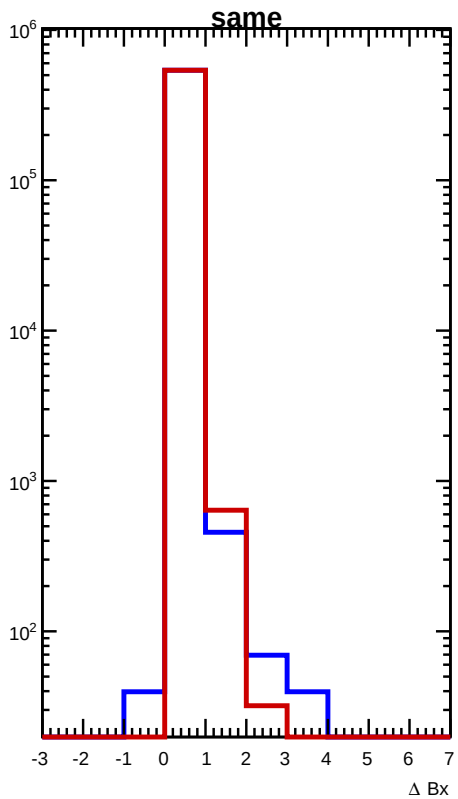


deltaBxDtRpc for T134

deltaBxRpc dttf6

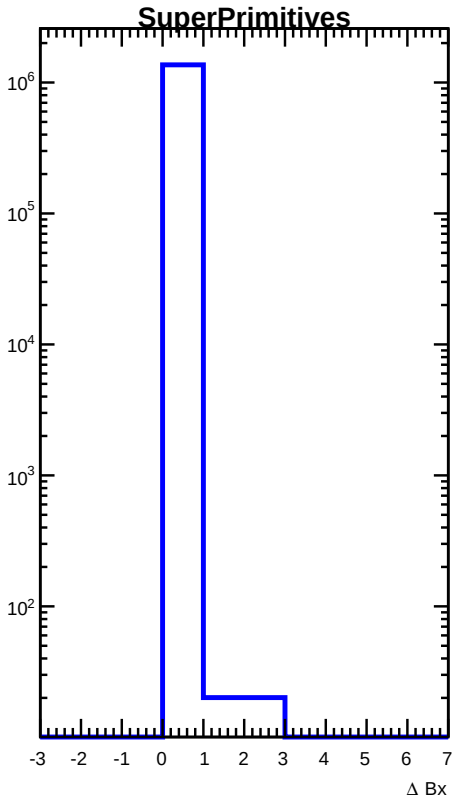


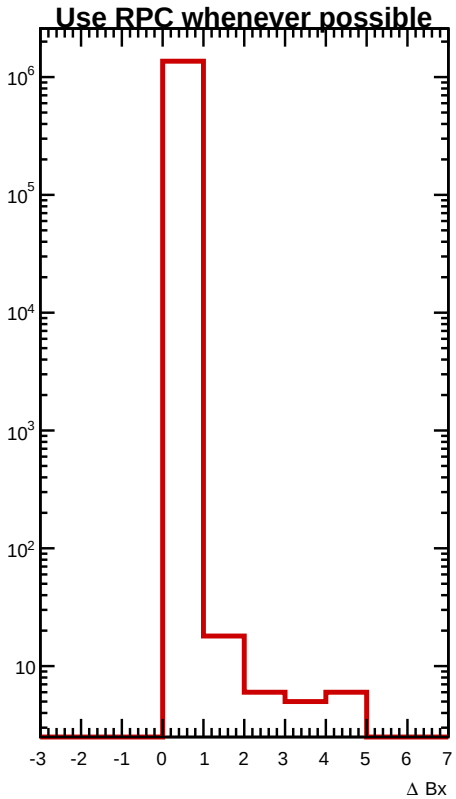


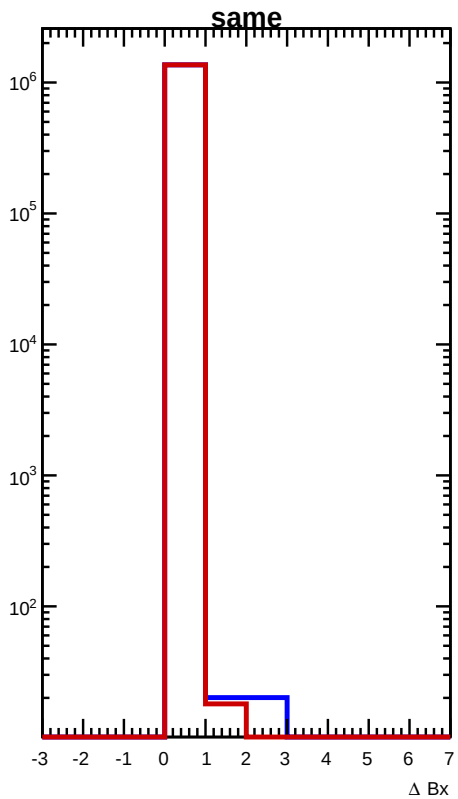


deltaBxDtRpc for T123+124

deltaBxRpc dttf7

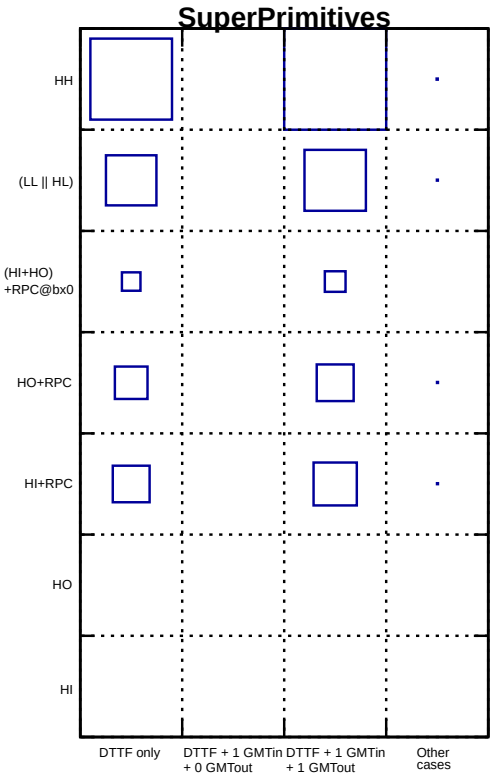


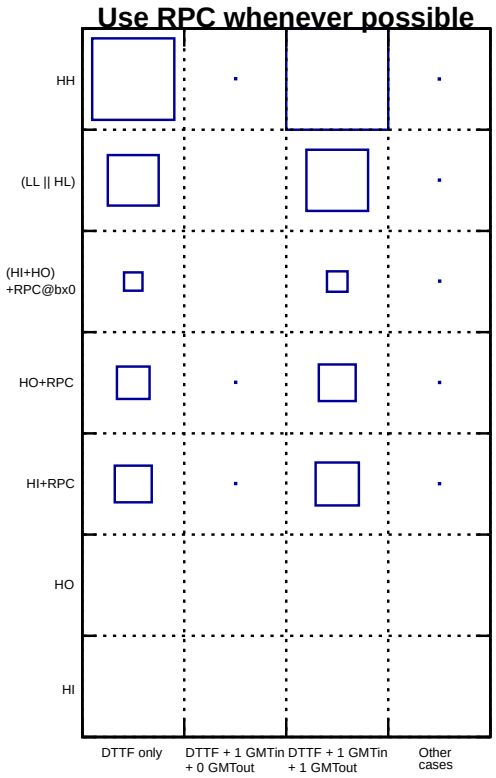


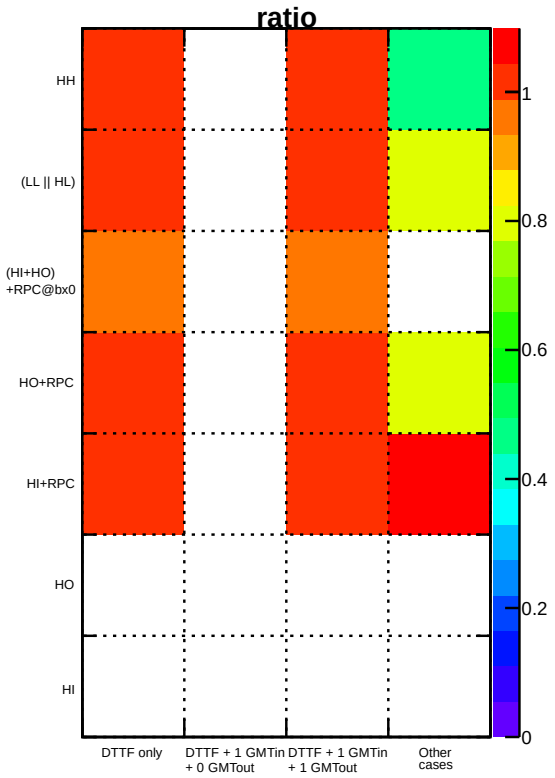


deltaBxDtRpc for T1234

dtQualityVsCategory

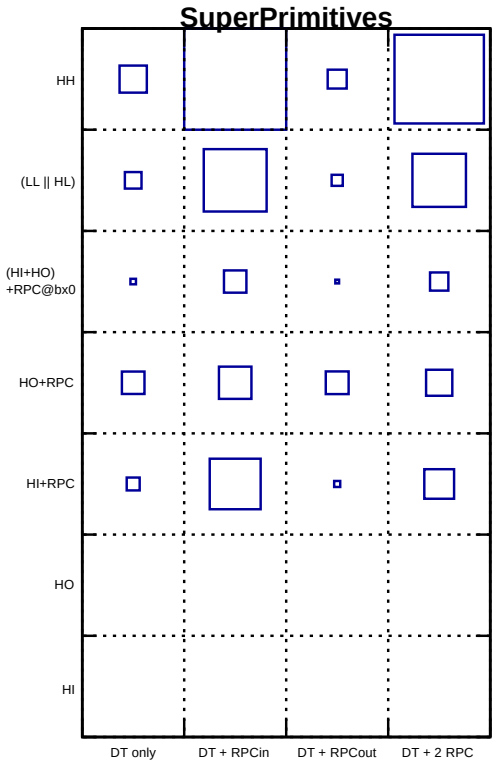


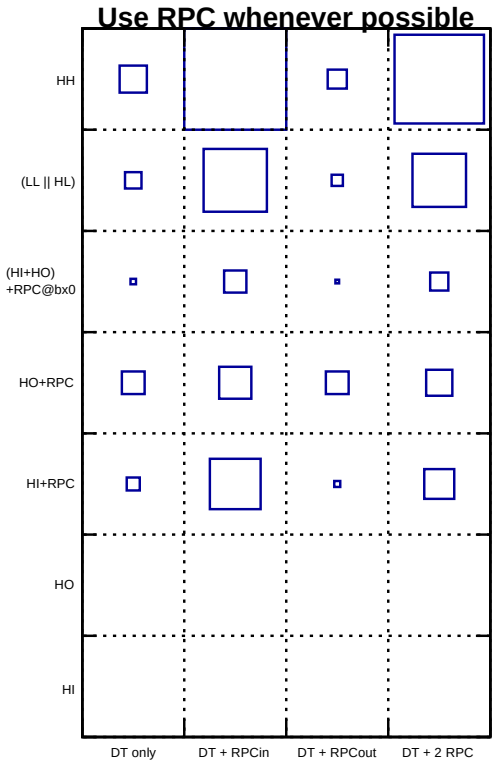


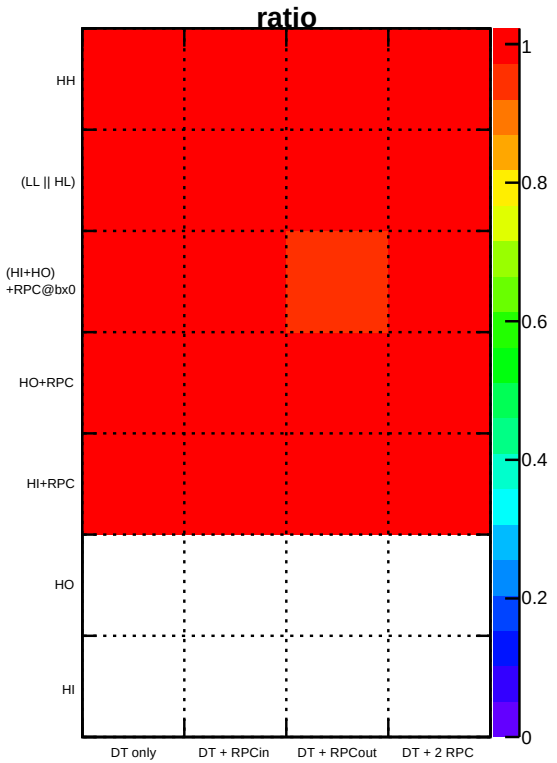


Dt Quality vs Category

dtQualityVsConfirm







Dt Quality vs RPC Confirm