

Summary and meaning of collections in the CMG-tuple produced by the X -> ZZ -> 2l2j analysis code

### EDBR (X -> ZZ) collections:

- Tag:
- Working with CMG code V5\_10
- Focusing only on collections containing EDBR (“ExoDiBosonResonance”) candidates
- Summary only for the 2e2j channel ; for 2mu2j candidates, replace the suffix “Ele” with “Mu”

Name of the collection	Meaning	Python file
cmgDiElectronDiJetEDBREle	Cands without final selection and without overlap check between Z cands (x-cleaning of jets/leptons used for building the Zs)	EDBRElectron/python/factories/cmddielectrondijetEDBR_cfi.py
cmgDiElectronDiJetKinFitEDBREle	As cmgDiElectronDiJetEDBREle but EDBR reconstructed from $Z \rightarrow jj$ after kinematic fit	EDBRElectron/python/factories/cmddielectrondijet_cfi.py
cmgEDBRSelEle	Candidates after preselection (no QG, no LD, no arbitration btw multiple candidates, yes overlap check)	EDBRElectron/python/skims/cmgedBRSel_cff.py
cmgEDBRSelKinFitEle	As cmgEDBRSelEle but EDBR reconstructed from $Z \rightarrow jj$ after kinematic fit	EDBRElectron/python/skims/cmgedBRSel_cff.py
cmgEDBRWeightedEle	All preselected EDBR + HLT and PU weights as user floats	EDBRElectron/python/resonance_cff.py
cmgEDBRKinFitWeightedEle	As cmgEDBRWeightedEle but EDBR reconstructed from $Z \rightarrow jj$ after kinematic fit	EDBRElectron/python/resonance_cff.py
cmgEDBRWeighted2012AEle	As cmgEDBRWeightedEle but PU weight only for 2012A	EDBRElectron/python/resonance_cff.py

The following collections are not in yet, but they will be added in the near future:

Name of the collection	Meaning	Python file
FinalSelectorKinFitEle_primary	EDBR candidates after full analysis chain but without arbitration btw multiple candidates	
FinalSelectorKinFitEle_secondary	Copy of FinalSelectorZeroKinFitEle_primary but with the $Z \rightarrow jj$ WITHOUT kinematic fit (EDBR kinematics and hel angles are recalculated)	

Name of the collection	Meaning	Python file
	with it)	
BestSelectorKinFitEle_primary	Final EDBR selection after full chain and having chosen the “best” EDBR cand according to #btags and masses of bosons. This is the one you want to use for final results.	
BestSelectorKinFitEle_secondary	Copy of BestSelectorKinFitEle_primary but with the $Z \rightarrow jj$ WITHOUT kinematic fit (EDBR kinematics and hel angles are recalculated with it)	
BestSidebandEle_primary	EDBR candidate after full selection AND arbitration but in the $M_{jj}$ sidebands	
BestSidebandEle_secondary	Copy of BestSidebandEle_primary but with the $Z \rightarrow jj$ WITHOUT kinematic fit (EDBR kinematics and hel angles are recalculated with it)	

### Z -> ee collections:

- For muon channel Z -> mumu, the meanings are the same, just replace “Ele” with “Mu” in the name of the collection

Name of the collection	Meaning	Python file
cmgDiElectronEDBR	All di-electrons pairs made of electrons passing pre-selections	EDBRElectron/python/factories/cmgDiElectron_cfi.py
cmgDiElectronSelEDBR	Like cmgDiElectronEDBR with kinematic and ID cuts applied	EDBRElectron/python/skims/cmgDiElectronSel_cfi.py
ZeeCand	Very very similar to cmgDiElectronSelEDBR: only difference is that the check on opposite charge of leptons is applied	EDBRElectron/python/skims/selEventsZ_cff.py

### Z -> jj collections:

Name of the collection	Meaning	Python file
cmgDiJet	All pairs of di-jets using PF-jets passing pre-selections	EDBRCommon/python/factories/cmgDiJet_cfi.py
ZjjCand	Like cmgDiJet with kinematic and ID cuts applied	EDBRCommon/python/skims/selectEventsZjj_cfi.py
cmgDiJetKinFit	Z->jj cands with mass fixed to PDG value by means of the kinematic fit	EDBRCommon/python/factories/cmgDiJetKinFit_cfi.py