

LCIO MC Particles

```
[00000022] 17| 94| 4.22e+01, 4.35e+01, -5.76e+00| 0.00e+00, 0.00e+00, 0.00e+00| 1.39e+02| 2 | [ ]| 0.00e+00, 0.00e+00  
, 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| 1.25e+02| 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| (0, 0) | [15,16] - [18,19]  
[00000023] 18| 5| 7.77e+01, 5.43e+01, 1.02e+01| 0.00e+00, 0.00e+00, 0.00e+00| 9.81e+01| 2 | [ ]| 0.00e+00, 0.00e+00  
, 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| 2.30e+01| 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| (0, 0) | [17] - [20,21]  
[00000024] 19| -5| -3.55e+01, -1.08e+01, -1.59e+01| 0.00e+00, 0.00e+00, 0.00e+00| 4.09e+01| 2 | [ ]| 0.00e+00, 0.00e+00  
, 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| 6.61e+00| 0.00e+00| 0.00e+00, 0.00e+00, 0.00e+00| (0, 0) | [17] - [22,23]
```

EDM4hep MC Particles

```
120000017 +94 +2 +0 +0.000000e+00 +0.000000e+00 +1.250000e+02 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.  
000000e+00 +0.000000e+00 +0.000000e+00 +4.216090e+01 +4.350210e+01 -5.756835e+00 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.000000e+00  
+0.000000e+00 +0.000000e+00 +0 +0  
parents : 120000015 120000016  
daughters : 120000018 120000019  
120000018 +5 +2 +0 +0.000000e+00 +0.000000e+00 +2.299646e+01 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.  
000000e+00 +0.000000e+00 +0.000000e+00 +7.768030e+01 +5.433334e+01 +1.018777e+01 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.000000e+00  
+0.000000e+00 +0.000000e+00 +0 +0  
parents : 120000017  
daughters : 120000020 120000021  
120000019 -5 +2 +0 +0.000000e+00 +0.000000e+00 +6.608149e+00 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.  
000000e+00 +0.000000e+00 +0.000000e+00 -3.551940e+01 -1.083124e+01 -1.594461e+01 +0.000000e+00 +0.000000e+00 +0.000000e+00 +0.000000e+00  
+0.000000e+00 +0.000000e+00 +0 +0  
parents : 120000017  
daughters : 120000022 120000023
```

LCIO Reconstructed Particle Conversion

```
collection name : ReconstructedParticles
parameters:

----- print out of ReconstructedParticle collection -----

flag: 0x0

[ id ] | com | type | momentum( px,py,pz ) | energy | mass | charge |
-----|-----|-----|-----|-----|-----|-----|
[00000173] | 0 | 0 | +2.57e-01, -2.37e-02, -1.13e-01 | 3.14e-01 | 1.40e-01 | 1.00e+00 |

covariance( px,py,pz,E ) : (0.00e+00, 0.00e+00, 0.00e+00, 0.00e+00, 0.00e+00,
particles ( [ id ] ):
tracks ( [ id ] ): [00000019]
clusters ( [ id ] ):
particle ids ( [id], PDG, (type)):
| Type | PDG | Likelihood | Algorithm type |
| 0 | 0 | 0.00e+00 | 0

vertices: startVertex( id:[ 00000000id_aRP: 00000000 ] endVertex( id:[00000000
[00000175] | 0 | 0 | +3.55e-01, +4.34e-01, -2.25e-01 | 6.20e-01 | 1.40e-01 | 1.00e+00 |

covariance( px,py,pz,E ) : (0.00e+00, 0.00e+00, 0.00e+00, 0.00e+00, 0.00e+00,
particles ( [ id ] ):
tracks ( [ id ] ): [00000021]
clusters ( [ id ] ):
particle ids ( [id], PDG, (type)):
| Type | PDG | Likelihood | Algorithm type |
| 0 | 0 | 0.00e+00 | 0

vertices: startVertex( id:[ 00000000id_aRP: 00000000 ] endVertex( id:[00000000
```

EDM4hep Reconstructed Particle input

```
ReconstructedParticles
id: type: energy: momentum [ x, y, z]:
mass:goodnessOfPID: covMatrix:
1100000000 +0 +5.387532e-01 +2.396805e-01 +4.238731e-01 -1.834670e-01
-1.000000e+00 +1.395704e-01 +0.000000e+00
clusters :
tracks : 80000000
particles :
particleIDs : 700000000
startVertex : 4274967294
particleIDUsed : 4274967294
1100000001 +0 +6.939873e-01 -3.934627e-01 +4.427416e-02 -5.525988e-01
-1.000000e+00 +1.395704e-01 +0.000000e+00
clusters :
tracks : 80000001
particles :
particleIDs : 700000001
startVertex : 4274967294
particleIDUsed : 4274967294
```

[Gitlab Repository](#) auf Codes