



Joint Institute for Nuclear
Research

SCIENCE BRINGING NATIONS
TOGETHER



CBM@BMN L1 tracking

Yu.Gornaya, M.Kapishin,
G.Pokatashkin, I.Rufanov,
V.Vasendina, A.Zinchenko

JINR, Dubna, Russia

March 2019

BMNROOT

macro/cbm/*.C

1. run_reco_gem_r7.C – reconstruction macro

Output branches:

StsDigi, StsCluster, StsHit, StsTrack, PrimaryVertex

2. SIGEMS_r7.root – SI+GEM geometry file

3. ResidOK_r7.C – residual macro

Output branches:

dXsmo, xsmo, dYsmo, ysmo, ista, nhits, ...

4. rootlogon.C, sts_v1_BMN_SI_GEM.digi.par – files of parameters like sensor positions & path of library

Data (tree name BMN_DIGIT):

/nica/mpd20/kapishin/run7/digit/*_sigemdigitthr2trig.root

Input tree must include next branches:

MYSILICON & STRIPGEM & EventHeader & BC1 & BC2 & VC & BD & Si

Do first the reconstruction macro (run_reco_gem_r7.C), after it, do other macros like ResidOk_r7 or some analysis with run_reco_gem_r7.C output data.

All macros should begin in compile mode, except for run_reco_gem_r7.C – interpreter mode.

Example:

```
.x run_reco_gem_r7.C("input_file","output_file")
```

```
.L ResidOk_r7.C++
```

```
ResidOk_r7("input_file","output_file")
```

The CBM@BMN code supporting 2 KF extrapolation methods:

1. Extrapolate
2. Smooth

The first method is just a linear extrapolation, the second method include refit and some corrections (more precisely).

The KF extrapolation have to use after initializing “CbmStsKFTrackFitter” - see ResidOk_r7.C for example.

The CBM@BMN code was tested at hydra/govorun with FairSoft oct17p1.

Remember, if input file have a tree name different than “cbmsim”

You must edit config/rootmanager.dat !!!

For example:

If input_file for run_reco_gem_r7.C from this repository

/nica/mpd20/kapishin/run7/digit/*_sigemdigitthr2trig.root

change “cbmsim” at rootmanager.data to BMN_DIGIT and just save file without remake project.