

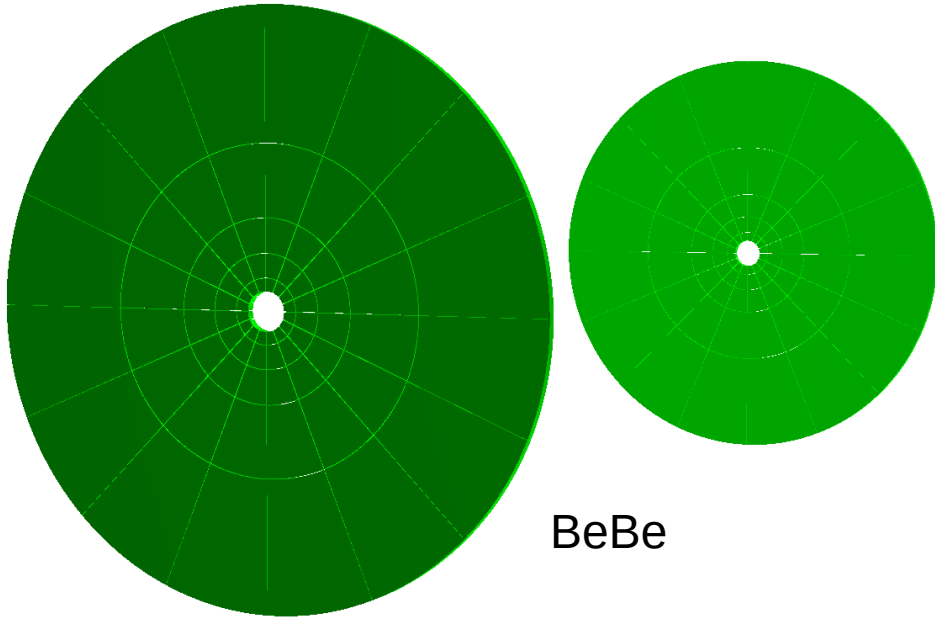
# Implementation of new Detectors and Geometries



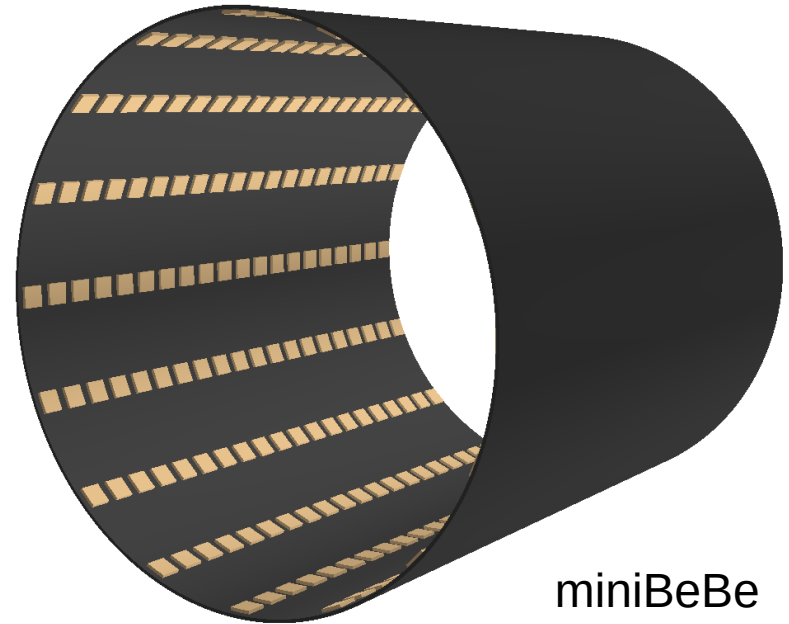
Pedro Antonio Nieto Marín

# Construction of geometries

<https://github.com/MexNICA/mpdroot>

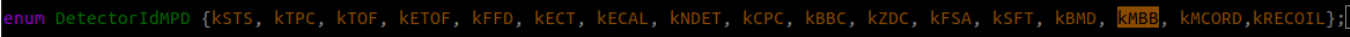


BeBe



miniBeBe

# Implementation of miniBeBe

1. Download the root file with the geometry (mbb\_v0.root) from: <https://github.com/MexNICA/mpdroot/tree/main/Geometrias/MBB>
2. Add it to the directory ../mpdroot/geometry
3. Download the mbb classes from: <https://github.com/MexNICA/mpdroot/tree/main/Clases/mbb>
4. Add the folder “mbb” with all the classes to the directory ../mpdroot
5. In the file CMakeLists.txt located at the directory ../mpdroot specify the mbb directory address by adding the line:  
`add_subdirectory (mbb)`
6. Add mbb at the MpdDetectorList.h file located at ../mpdroot/mcstack as we see in the image:  


```
enum DetectorIdMPD {kSTS, kTPC, kTOF, kETOF, kFFD, kECT, kECAL, kNDT, kCPC, kBBC, kZDC, kFSA, kSFT, kBMD, kMBB, kMCOR, kRECOIL};
```
7. Add mbb libraries in the file mpdloadlibs.C located at ../mpdroot/macro/mpd with the line: `gSystem->Load("libmbb");`
8. To make a fast analysis in the file geometry\_stage1.C located at ../mpdroot/macro/mpd add the lines:  
`FairDetector *Mbb = new MbbDetector("MBB", kTRUE);`  
`Mbb->SetGeometryFileName("mbb_v0.root");`  
`fRun->AddModule(Mbb);`
9. Build the framework again to add mbb, running the command `make` in the directory ../mpdroot/build
10. Run the command `. config.sh` in the directory ../mpdroot/build to have the root environment and finally run the file runMC.C located at ../mpdroot/macro/mpd

# Implementation of BeBe

1) Download the root file with the geometry (bbc\_pay\_NdetScin\_v1.root) from:

<https://github.com/MexNICA/mpdroot/tree/main/Geometrias/BMD>

2) Add it to the directory ../mpdroot/geometry

3) Download the bmd (BeBe) classes from <https://github.com/MexNICA/mpdroot/tree/main/Clases/bmd>

4) Add the folder “bmd” with all the classes to the directory ../mpdroot

5) Add bmd libraries in the file mpdloadlibs.C located at ../mpdroot/macro/mpd with the line: `gSystem->Load("libbmd");`

6) Include BeBe in the geometry\_stage1.C file located in ../mpdroot/macro/mpd with the lines:

```
FairDetector *Bmd = new BmdDetector("BMD",kTRUE );
```

```
Bmd->SetGeometryFileName("bbc_pay_NDetScin_v1.root");
```

```
fRun->AddModule(Bmd);
```

7) Build the framework again to add bmd (BeBe), running the command `make` in the directory ../mpdroot/build

8) Run the command `. config.sh` in the directory ../mpdroot/build to have the root environment and finally run the file runMC.C located at ../mpdroot/macro/mpd

# Thanks

- Manual from Luis Valenzuela in:  
<https://github.com/MexNICA/mpdroot>  
Mpdroot-manual-vmarch2020.pdf