

CNAO2022 Parameters

Global Parameters file

Campaign Manager files

FOOT Geometry

Global Parameters

Foot Global Parameters

File: config/CNAO2022/FootGlobal.par

```
##### END - Options for reconstruction
```

IncludeDI:	n
IncludeST:	y
IncludeBM:	y
IncludeTG:	y
IncludeVT:	y
IncludeIT:	y
IncludeMSD:	y
IncludeTW:	y
IncludeCA:	y

Detectors on

Campaign Manager

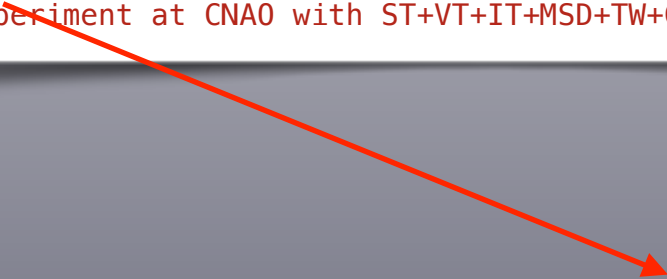
Campaign manager (i)

• Master file: ./cammaps/FOOT.map

```
// List of Campaigns
CamNumber:    0
CamName:      "STD"
CamDataMC:    1
CamDate:      ""
CamSum:       "Test using standard input files"

. . .

CamNumber:    22
CamName:      "CNA022"
CamDataMC:    0
CamDate:      "December 2022"
CamSum:       "Test experiment at CNAO with ST+VT+IT+MSD+TW+CAL @ 200,400 MeV/u"
```



New line in file for CNAO2022

Campaign manager (ii)

• Campaign file: ./cammaps/CNAO2022.cam

```
// Campaign file
CamName: "CNAO2022"
RunNumber: 5100-5500;
NumberDevices: 10

DetectorName: "FOOT"
NumberFiles: 1
"./geomaps/CNAO2022/FOOT.geo": 5100;

DetectorName: "DI"
NumberFiles: 1
"./geomaps/CNAO2022/TADIdetector.geo": -1

DetectorName: "ST"
NumberFiles: 5
"./geomaps/CNAO2022/TASTdetector.geo": -1
"./config/CNAO2022/TASTdetector.cfg": -1
"./config/CNAO2022/WDChannelMap.map": -1
"./calib/CNAO2022/WDpar.cal": -1;
"./calib/CNAO2022/WDTimeCalibration/tcalib.dat": -1;

DetectorName: "BM"
NumberFiles: 4
"./geomaps/CNAO2022/TABMdetector.geo": -1
"./config/CNAO2022/TABMdetector.cfg": -1
"./config/CNAO2022/TABMdetector.map": -1
"./calib/CNAO2022/TABM_T0_Calibration.cal": -1

DetectorName: "TG"
NumberFiles: 1
"./geomaps/CNAO2022/TAGdetector.geo": 5100;;
```

```
DetectorName: "VT"
NumberFiles: 3
"./geomaps/CNAO2022/TAVTdetector.geo": -1
"./config/CNAO2022/TAVTdetector.cfg": -1
"./config/CNAO2022/TAVTdetector.map": -1

DetectorName: "IT"
NumberFiles: 3
"./geomaps/CNAO2022/TAITdetector.geo": -1
"./config/CNAO2022/TAITdetector.cfg": -1
"./config/CNAO2022/TAITdetector.map": -1

DetectorName: "MSD"
NumberFiles: 5
"./geomaps/CNAO2022/TAMSDdetector.geo": -1
"./config/CNAO2022/TAMSDdetector.cfg": -1
"./config/CNAO2022/TAMSDdetector.map": 5100;
"./calib/CNAO2022/TAMSD_Pedestal.cal": 5100;
"./calib/CNAO2022/TAMSD_Energy_Calibration.cal": -1

DetectorName: "TW"
NumberFiles: 6
"./geomaps/CNAO2022/TATWdetector.geo": -1
"./config/CNAO2022/TATW_BBparameters.cfg": -1
"./config/CNAO2022/TATWChannelMapXML.map": -1
"./calib/CNAO2022/TATW_Energy_Calibration.cal": -1
"./calib/CNAO2022/TATW_Tof_Calibration.cal": -1;

DetectorName: "CA"
NumberFiles: 5
"./geomaps/CNAO2022/TACAdetector.geo": -1
"./config/CNAO2022/TACAdetector.map": -1
"./calib/CNAO2022/TACA_Energy_Calibration.cal": -1
"./calib/CNAO2022/
TACA_Temperature_Calibration_perCry.cal": -1
```

FOOT Geometry

Global FOOT Geometry (i)

→ Global transformation: geomaps/CNAO2022/FOOT_5100.geo (i)

```
// X,Y,Z and angles
StartBaseName: "ST"
StartPosX: 0. StartPosY: 0. StartPosZ: -42.7
StartAngX: 0. StartAngY: 0. StartAngZ: 0.

TargetBaseName: "TG"
TargetPosX: 0. TargetPosY: 0. TargetPosZ: 0.
TargetAngX: 0. TargetAngY: 0. TargetAngZ: 0.

BmBaseName: "BM"
BmPosX: 0. BmPosY: 0. BmPosZ: -27.4
BmAngX: 0. BmAngY: 0. BmAngZ: 0.

VertexBaseName: "VT"
VertexPosX: 0. VertexPosY: 0. VertexPosZ: 2.1
VertexAngX: 0. VertexAngY: 0. VertexAngZ: 0.

MagnetsBaseName: "DI"
MagnetsPosX: 0. MagnetsPosY: 0. MagnetsPosZ: 14.
MagnetsAngX: 0. MagnetsAngY: 0. MagnetsAngZ: 0.

InnerTrackerBaseName: "IT"
InnerTrackerPosX: 0. InnerTrackerPosY: 0. InnerTrackerPosZ: 5.5
InnerTrackerAngX: 0. InnerTrackerAngY: 0. InnerTrackerAngZ: 0.
```

→ Take position of HIT2022 and put ITR btw VTX and MSD

→ ITR: 2x4 M28 modules

Global FOOT Geometry (ii)

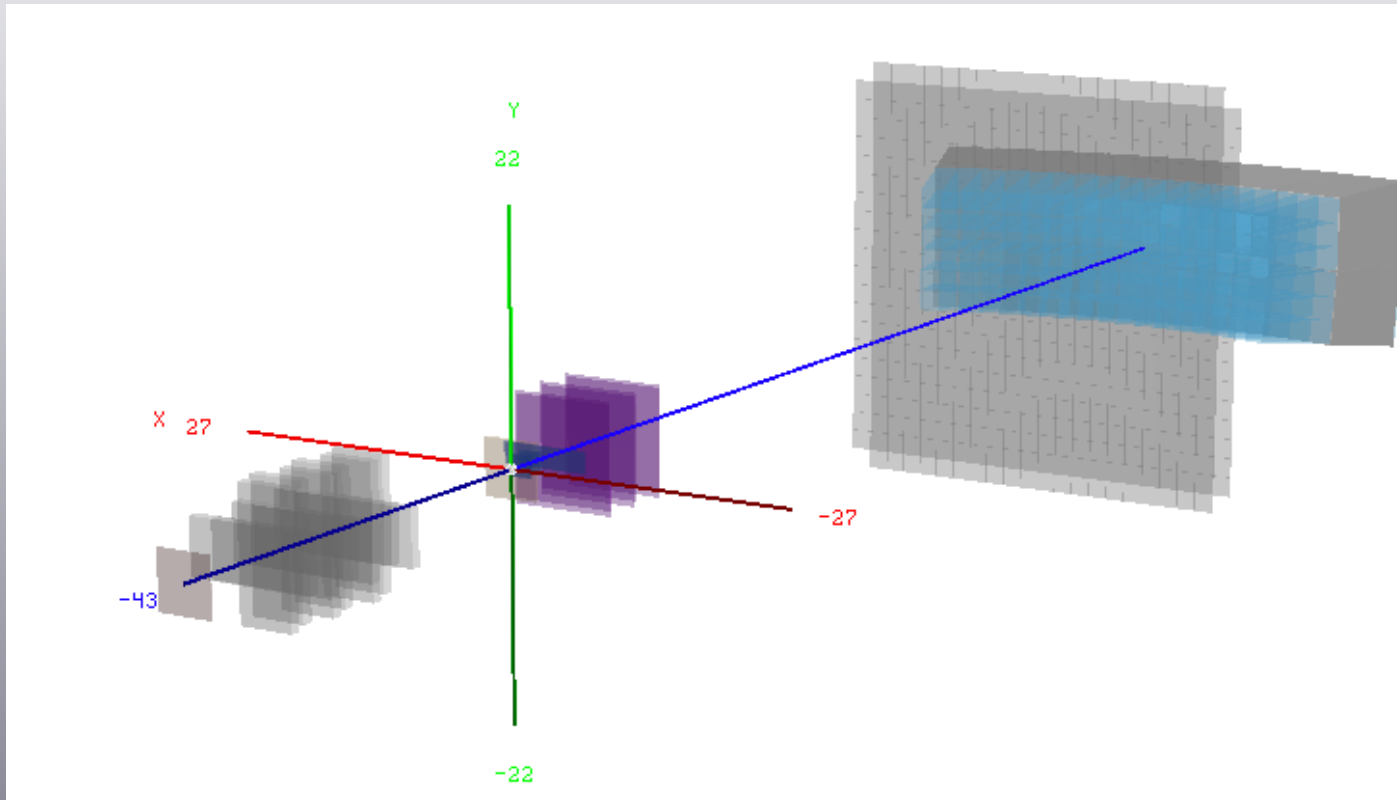
• Global transformation: geomaps/CNAO2022/FOOT_5100.geo (ii)

```
MicroStripBaseName: "MSD"  
MicroStripPosX: 0. MicroStripPosY: 0. MicroStripPosZ: 11.85  
MicroStripAngX: 0. MicroStripAngY: 0. MicroStripAngZ: 0.  
  
TofWallBaseName: "TW"  
TofWallPosX: 0. TofWallPosY: 0. TofWallPosZ: 99.7  
TofWallAngX: 0. TofWallAngY: 0. TofWallAngZ: 0.  
  
CaloBaseName: "CA"  
CaloPosX: 0. CaloPosY: 0. CaloPosZ: 110.8  
CaloAngX: 0. CaloAngY: 0. CaloAngZ: 0.
```

➡ Put middle of CAL 2x6 modules at beam center (Not implemented for Fluka)

Global FOOT Geometry (iii)

• FOOT framework



Global FOOT Geometry (iv)

·& Calorimeter: mapping

Crystal Id's

32	30	31	14	12	13	5	3	4	23	21	22	41	39	40	50	48	49
29	27	28	11	9	10	2	0	1	20	18	19	38	36	37	47	45	46
35	33	34	17	15	16	8	6	7	26	24	25	44	42	43	53	51	52
86	84	85	68	66	67	59	57	58	77	75	76	95	93	94	104	102	103
83	81	82	65	63	64	56	54	55	74	72	73	92	90	91	101	99	100
89	87	88	71	69	70	62	60	61	80	78	79	98	96	97	107	105	106

Module Id's

3	1	0	2	4	5
9	7	6	8	10	11

➡ Should find a mapping less “complicated” ?

Conclusions

- Files ready for CNAO2022 data taking
 - ➡ No calibration (just copy of GSI2021)
 - ➡ Need dedicated alignment runs for tracking systems (rate $\ll$ 1kHz, for each setup)
 - ➡ Run number begins with 5100 (arbitrary but should have a convention with DAQ people, avoid renaming of the files each beam time)

End