Communications

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ECAL1/2 description and general proper manners

```
G4double zSize = 45.0 / 2 * CLHEP::cm;
G4double posZ = _scalIn->position[2];    From calo.xml file, also used to create detectors.dat file

// This value is for MAINZ, OLGA and Shashlik modules:
// In detectors.dat the given z size is bigger than the length of the modules.
// So we have to subtract this difference to keep the correct z positioning.
// Second number for Shashlik:                           ?
// this positionOffset value defines the difference between the z-position
// of the center of sensitive detector volume and the hull box
// positionOffset = dimensionHull[2] - thicknessHull - scintillatorDimensions[2]
G4double zDifference = 0;

TGEANT::T4CaloModule type;
if (_scalIn->moduleName == "GAMS") {
  type = TGEANT::GAMS;
} else if (_scalIn->moduleName == "MAINZ") {
  type = TGEANT::MAINZ;
  moduleDistanceX = 7.660 * CLHEP::cm;
  moduleDistanceY = 7.500 * CLHEP::cm;
  zDifference = -1.3 * CLHEP::cm;
  zSize = 36.0 / 2. * CLHEP::cm;
} else if (_scalIn->moduleName == "OLGA") {
  type = TGEANT::OLGA;
  moduleDistanceX = moduleDistanceY = 14.300 * CLHEP::cm;
  zDifference = -5.0 * CLHEP::cm;
  zSize = 47.0 / 2. * CLHEP::cm;
} else if (_scalIn->moduleName == "SHASHLIK") {
  type = TGEANT::SHASHLIK;
  zDifference = -1.85 * CLHEP::cm + 4.67 * CLHEP::cm;
} else {
  T4SMessenger::getInstance()->printMessage(T4SWarning, __LINE__, __FILE__,
  "T4ECAL1::constructRegions: Unknown Module name: '" + _scalIn->moduleName + "'. Skip this entry! Please check your calo.xml file!");
  return;
}

posZ = _scalIn->position[2] + zDifference;
```

To be avoided or even prohibited: If discrepancy/mistake found in RD detectors.dat, we should correct it rather than hardcoding patches in MC!

Otherwise it can create:

- overlaps between volumes
- discrepancy between MC/RD
- Confusion between RD/MC detectors.dat

Side remarques: overlaps

We are strict with detector positioning (1 reference plane) for a station to avoid overlaps but they are still present for:

- PMM 1, 2 and 3 (3 warnings)
- W45 U and V (never ending warnings)
- HCALs
- ECAL1 and 2

In addition, several places where the check for overlaps are always disable.
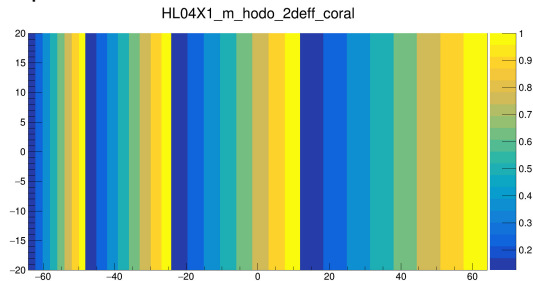
Traceability of TGeant initial settings

Not always easy to retrieve initial settings of a production (settings.xml, calo.xml, revision number, ...)

Suggestion: save all this information at the creation of the tgeant file that can be retrieved like for mDST ("phast -+")
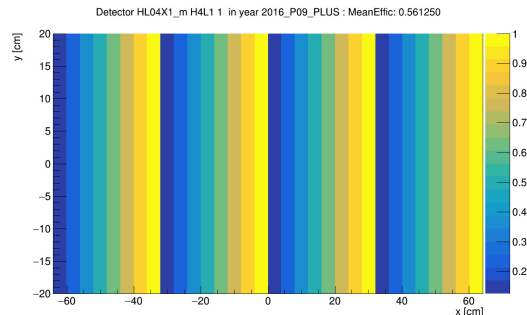
Sergei G.: Would you be available to attack this?

Hodoscope efficiency issues
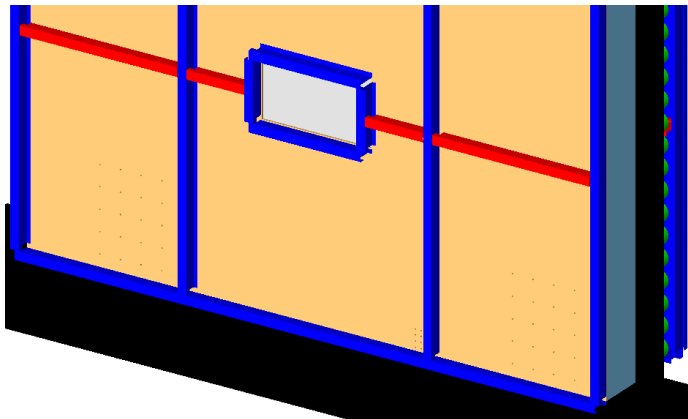
Input to SQlite DB

Output of SQLite DB

The bin width information is not stored in the DB and therefore creates an average pitch value for the slabs

$\rightarrow$ One histogram with constant bin width for each section (TBname+Detname)

Johannes already provided me with the histograms, to be included and validated

BACKUP

ECAL1 z-position of modules

Module	Tech. note		detectors.dat	
	Length (cm)	PMT (cm)	Length (cm)	z-position (cm)
Olga	47.0	10.0	57.0	6.0 (1.0?)
Mainz	36.0	2.6	38.6	-3.2 (-4.5?)
GAMs	45.0	??	45.0	0.0 (OK?)
Shashlik	45.0	??	39.35	-2.825 (0.0?)

Sometimes,

the size of the PMT seems to be included in the length of the active volume, sometimes not

Shashlik modules are smaller in detects.dat compared to the document I received, is the PMT length already included in the 45.0 cm?