



## **XML Description of ECAL Geometry**

- ◆ **For XML description of ECAL Geometry were used:**  
**Det/XmIDDDDB/v6, Det/XmlEditor/v4, Det/DetDesk/v8,**  
**Vis/GaudiLab/head**
- ◆ **ECAL TDR, Engineering Drawings of ECAL**
- ◆ **In XML Description the real Design was simplified**



# “XML tree”



~/Det/XmIDDDDB/v\*/DDDB >

dddb.xml geometry.xml structure.xml materials DTD

DetElem(Muon,Ecal,Magnet...)

~/Ecal >

geometry.xml structure.xml Modules.xml Installation.xml

Modules Installation

~/Modules > related\_to\_Modules.xml

~/Installation > related\_to\_Installation\_of\_Modules.xml

~/Ecal/geometry.xml

## Module Size

```
<parameter name = "EcalModuleXYSize" value = "121.5*mm"/>
```

## Cell Sizes

```
<parameter name = "EcalInnCellXYSize" value = "40.4*mm"/>
```

```
<parameter name = "EcalMidCellXYSize" value = "60.6*mm"/>
```

```
<parameter name = "EcalOutCellXYSize" value = "121.2*mm"/>
```

## Structure of **ECAL**:

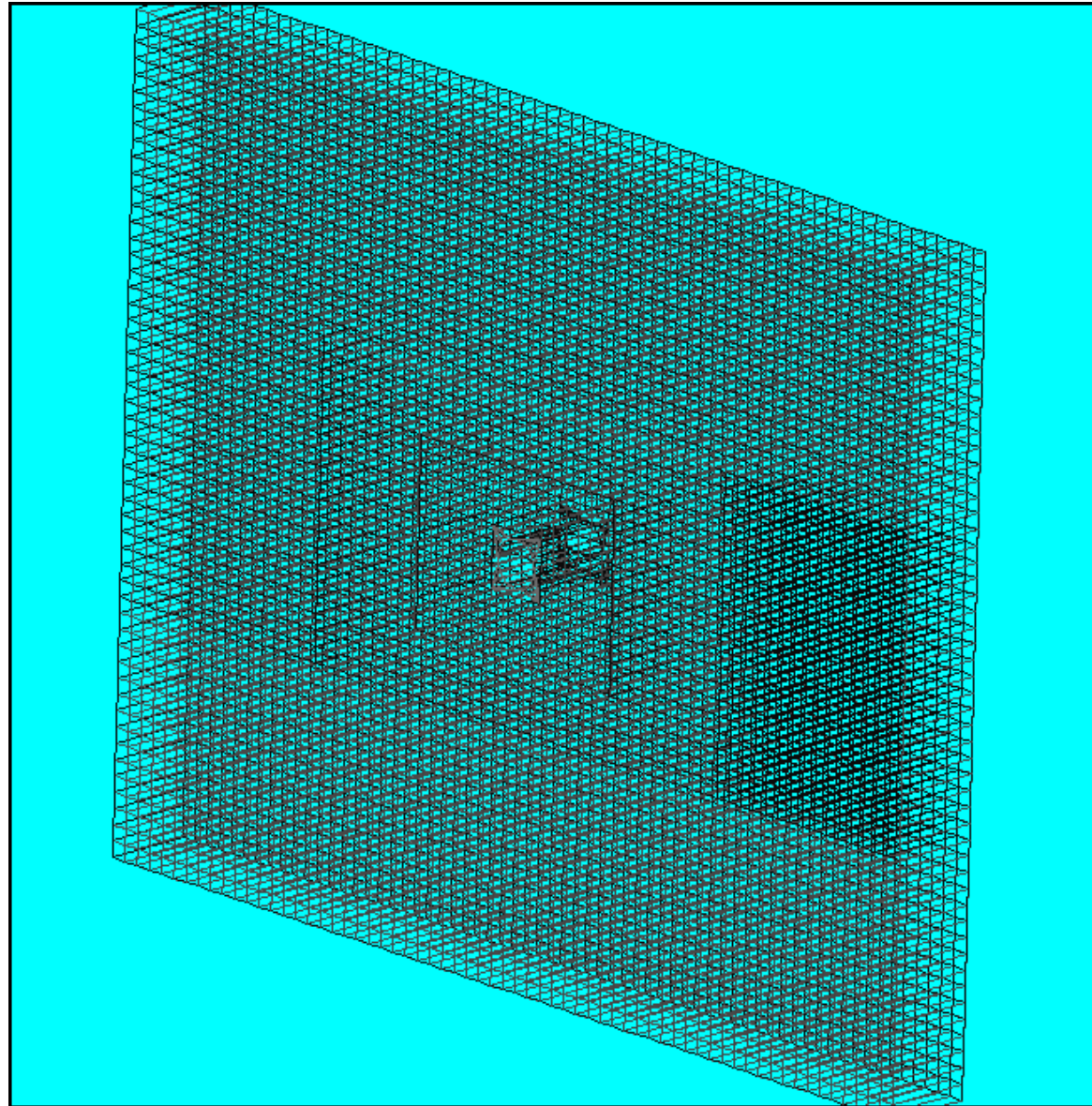
Simplified **Support Frame** in the center

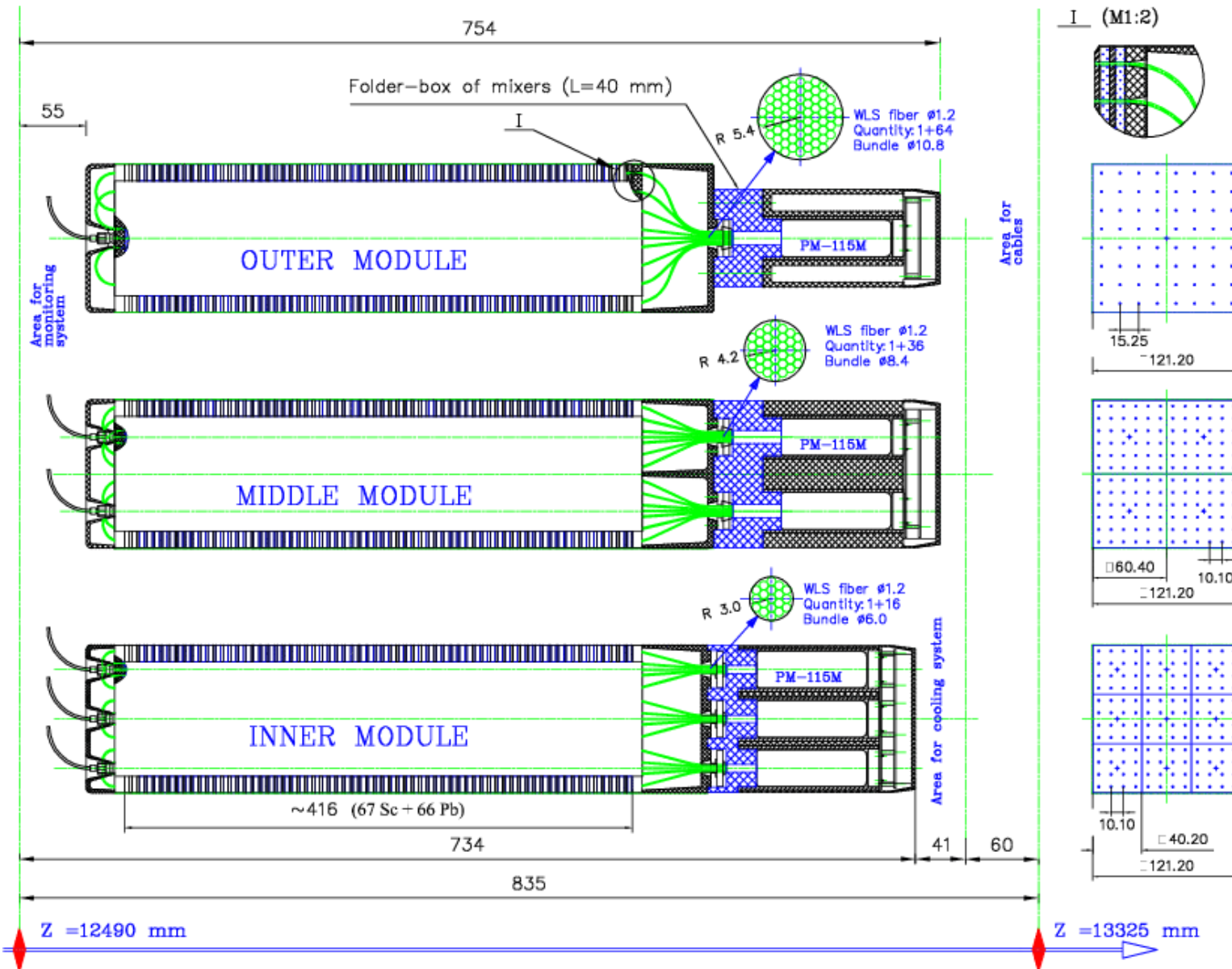
<box> - <tubs>

Inner, Middle and Outer Sections

<box> - <box>

with corresponding **Modules** installed with new 2Dim paramphysvol





Logical Volume of

**Modules** includes:

1. **Front Cover** empty <box>

2. **Stack with Cells**

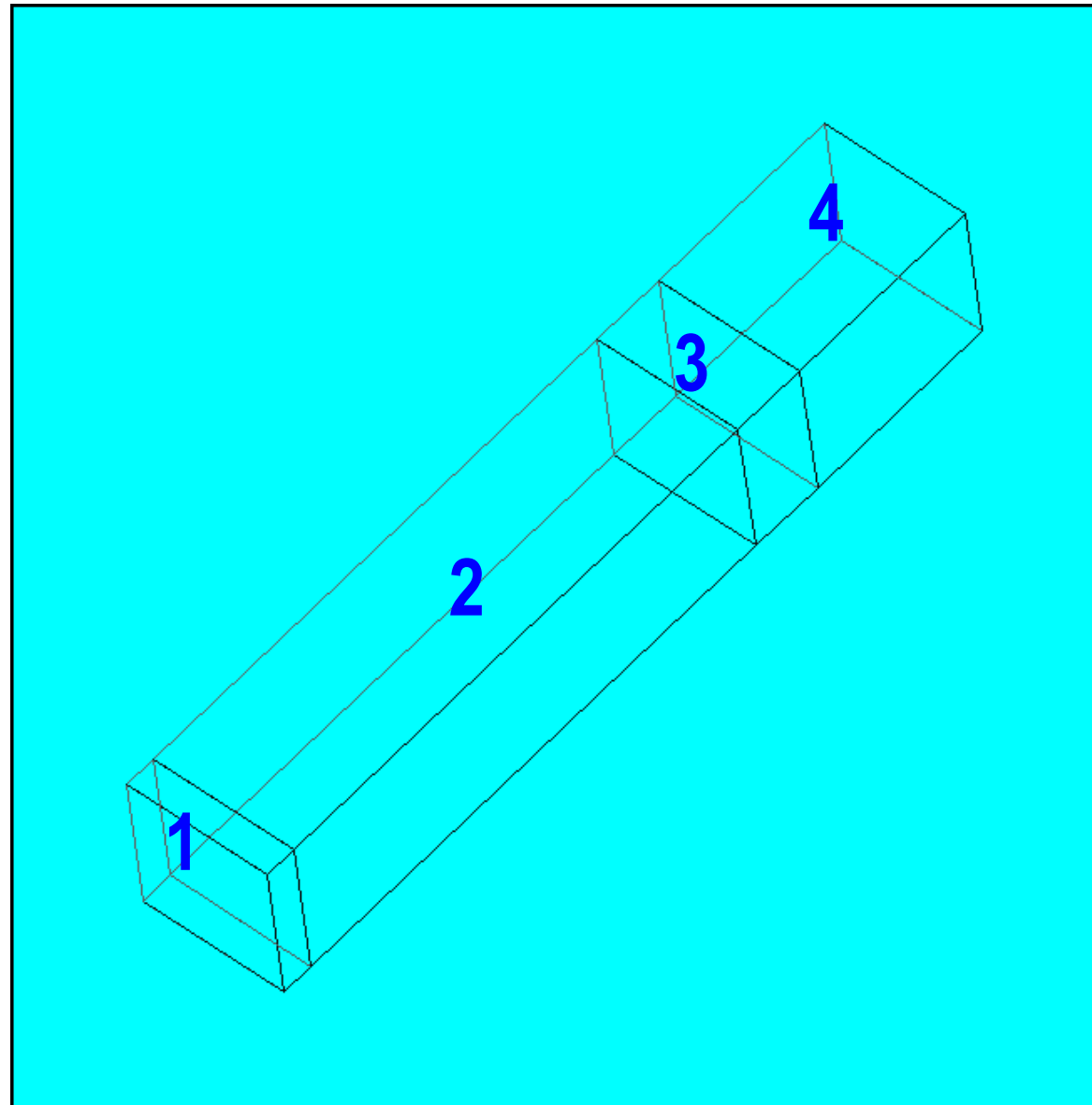
main part <box>

3. **Back Cover** empty <box>

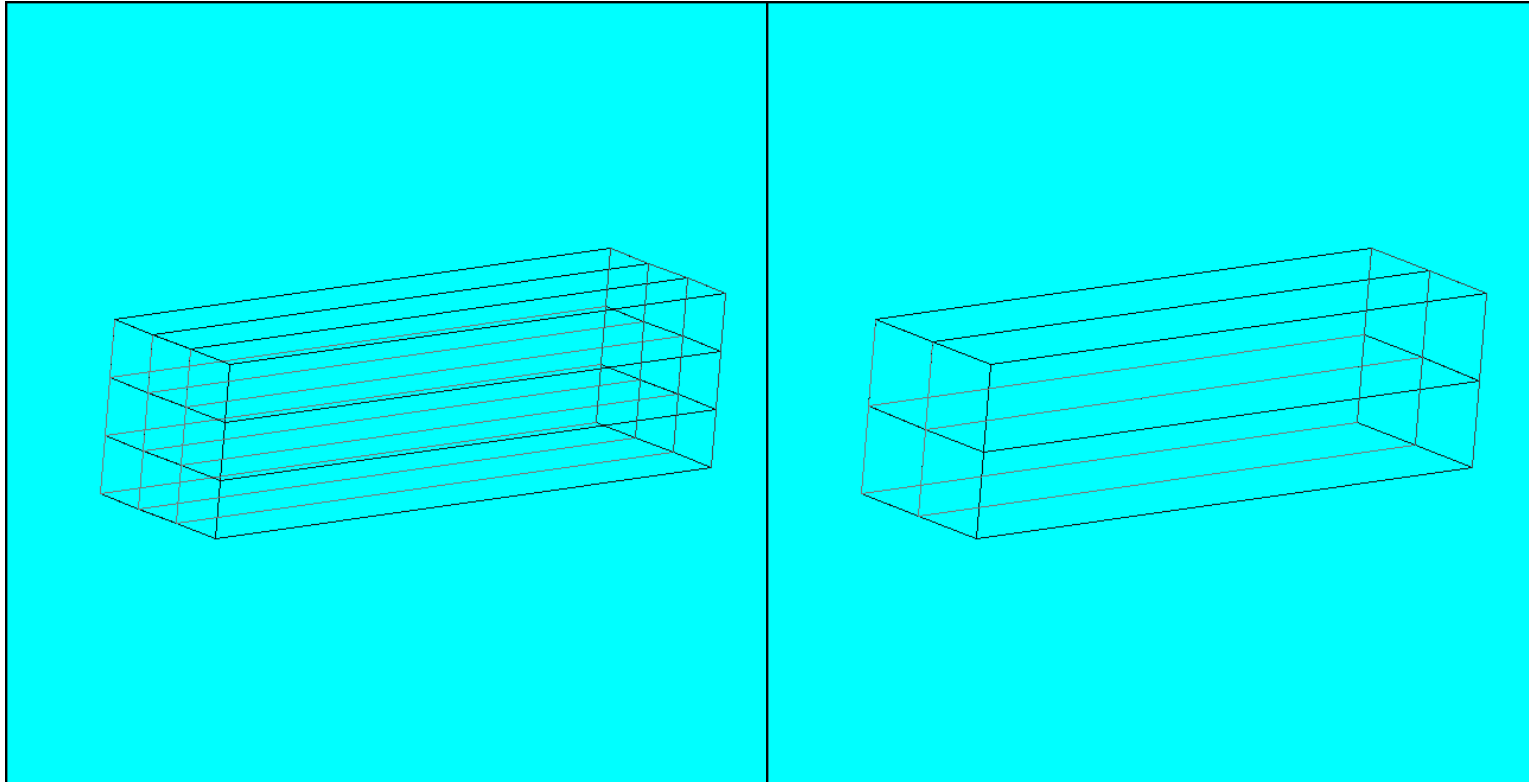
4. **Read Out** empty <box>

Each Module is inside

the Steel Cover



# Module Stack as Cells Matrix



**Inner** Module Stack  
with **3x3** Cells

**Middle** Module Stack  
with **2x2** Cells

**Outer** Module with **one** Cell

**Each Cell** presented  
as **Stack:**

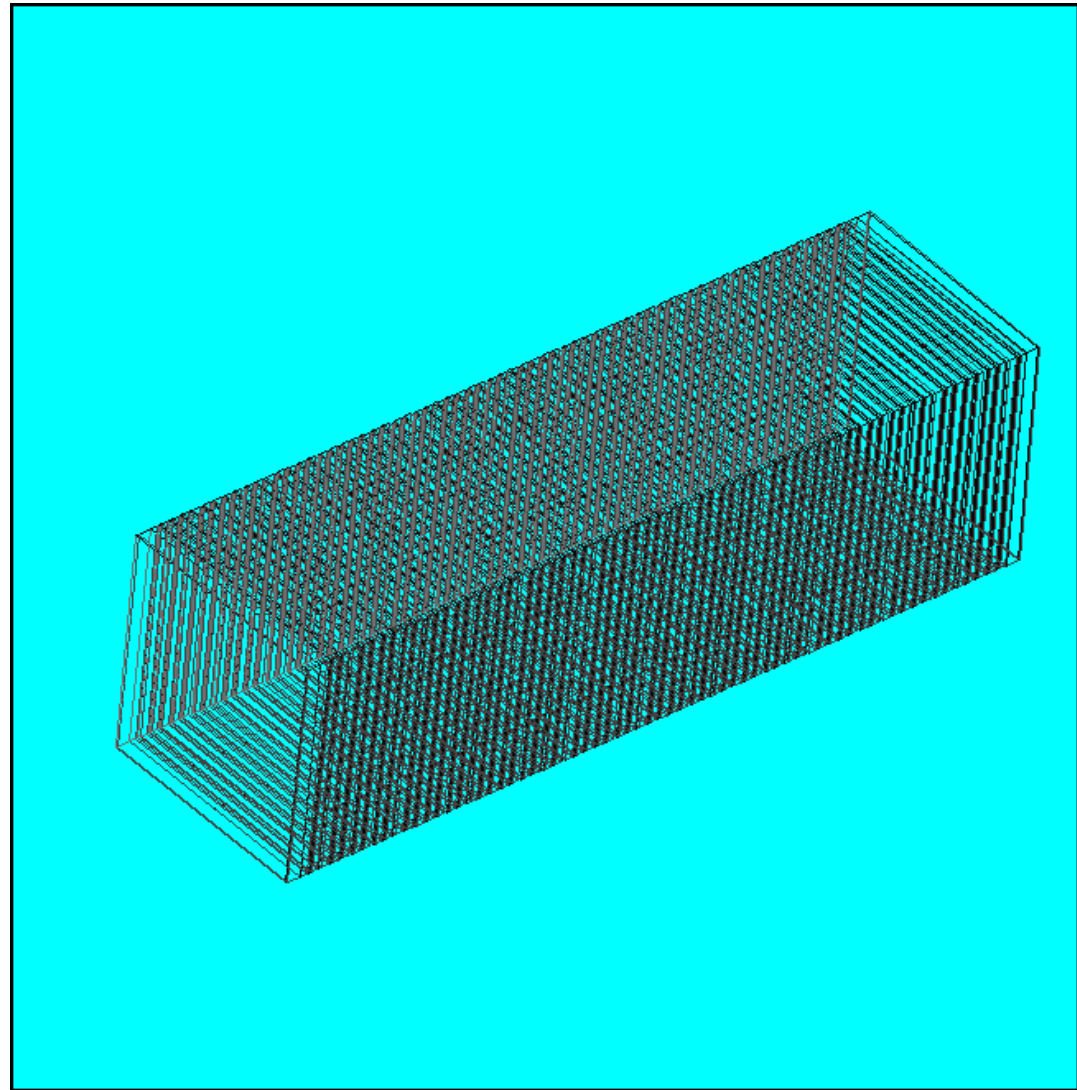
Into **<box>** with  
**material=paper** installed

**2 Plastic** Layers

**2 Steel** Matrixes

**66 Pb** Plates

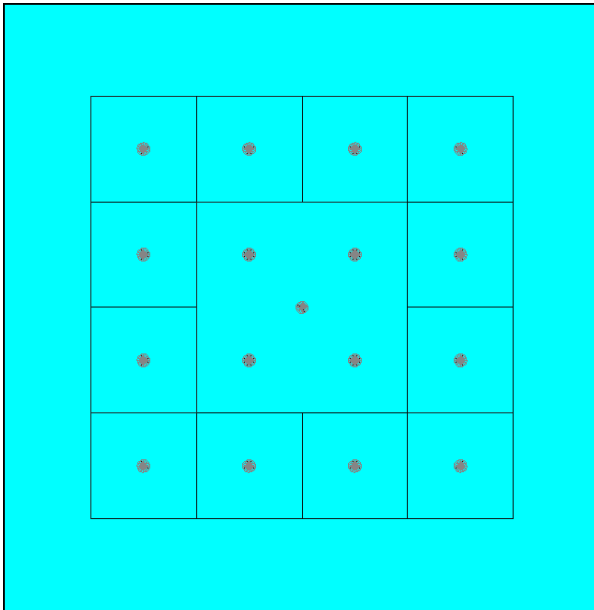
**67 Sc** Plates



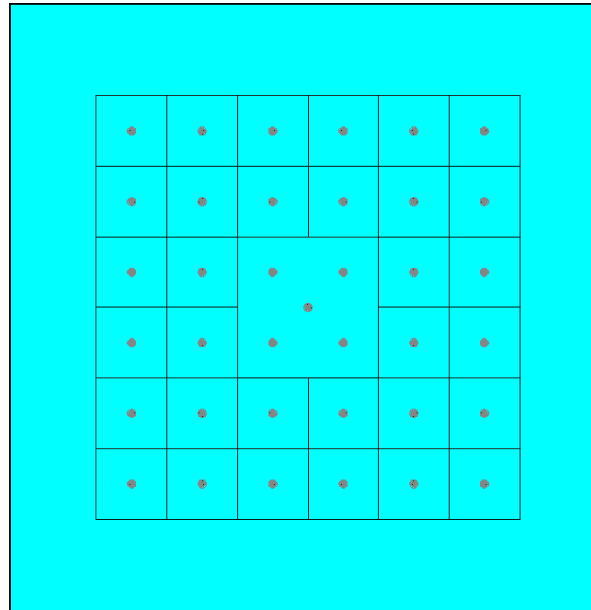
**Outer Cell**



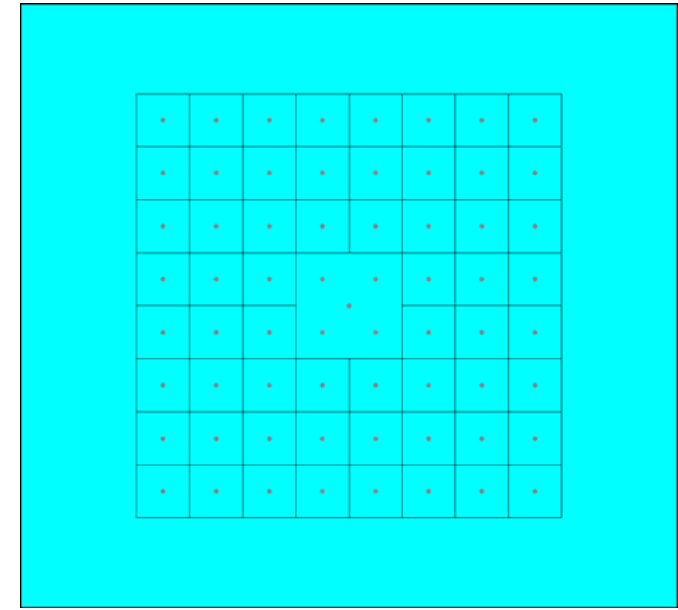
# Front view of Inner, Middle and Outer Cells



**Inner Cell**  
**40.4x40.4 mm<sup>2</sup>**  
**(4x4 +1) Fibers**



**Middle Cell**  
**60.6x60.6mm<sup>2</sup>**  
**(6x6+1) Fibers**



**Outer Cell**  
**121.2x121.2 mm<sup>2</sup>**  
**(8x8+1) Fibers**

**Sc&Pb Plates with Fibers, Steel Plates with holes,  
 Plastic Plates are monolithic**

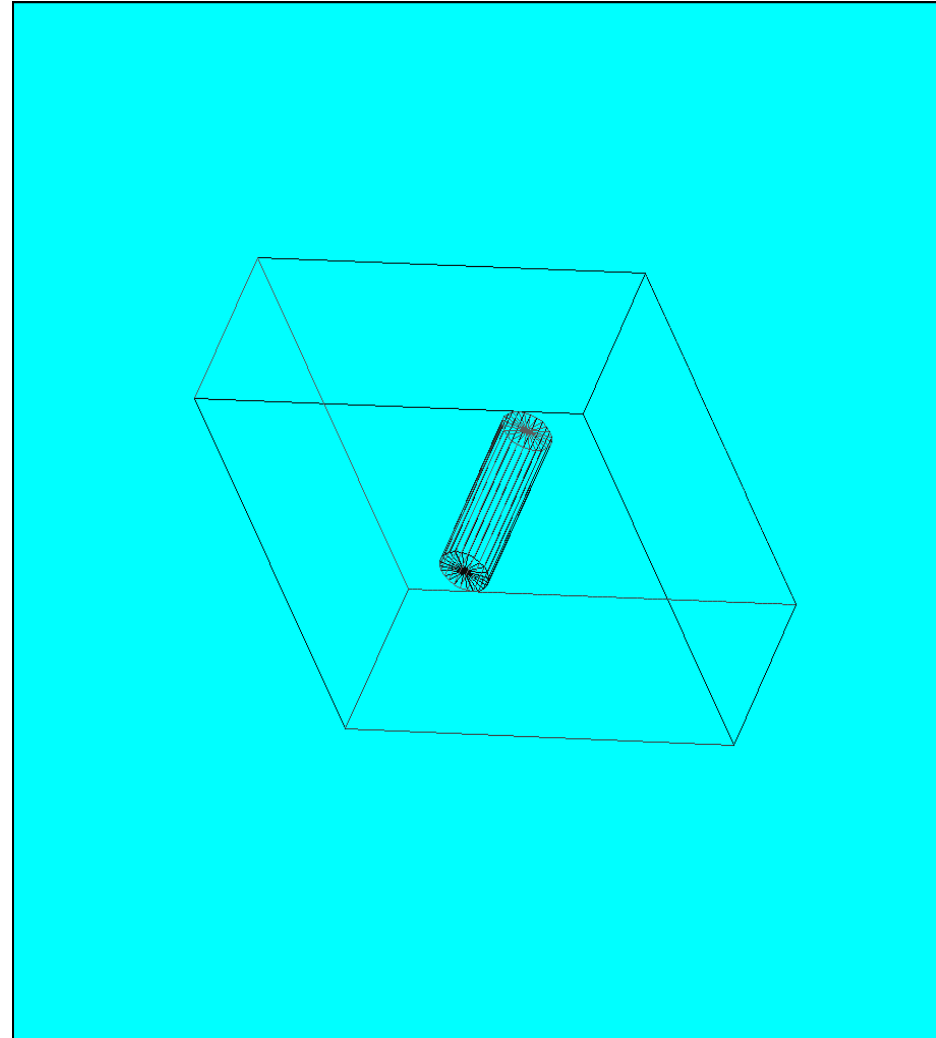
**SubFibers** are installed into  
SubCells (**Pb** and **Sc**)

**No Fibers** in:

- **Plastic** and **Steel** plates
- **Paper** between Plates.

**No holes** between

Fiber and **Pb** or **Sc**.



- ◆ XML description of is **ECAL/v1** is done
- ◆ Simplified **Support Frame, Inner, Middle and Outer Modules** installed into corresponding **Ecal Sections**
- ◆ **Cells** inside Modules are presented as **Stacks** with a number of **Pb & Sc Plates** and **Paper** between
- ◆ **SubFibers** installed into **SubCells** **without** hole
- ◆ **No Fibers** in **Paper, Steel** and **Plastic Plates**.

**Main Problem:**

In **GaudiLab/head** impossible to visualize **ECAL** in a whole

**Visualization** of one **Module** takes **few minutes !!!**

**Not in CVS yet**