

# ECal geometry construction

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# Crystal ECAL layout

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## Basic concept:

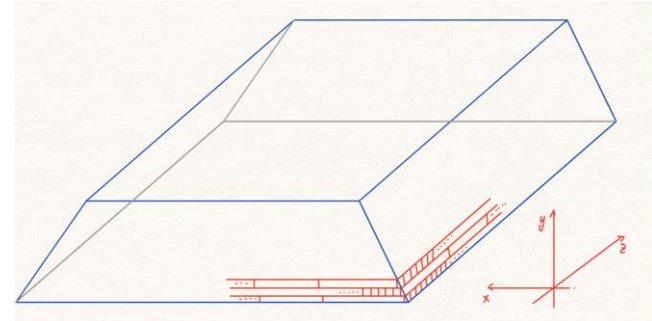
- Ideal detector, no readout, no supporting structure, etc.
- $R_0 = 1.8m$
- $Z = 4.6m$
- Height=28cm, 28 layers.
- 8 parts are exactly the same.
- All parameters are hard-coded.
  
- Crystal:
  - 1cm\*1cm\*~40cm.



# Crystal ECAL layout

#Layer 1~28 from inner to outer.

- Odd-layer:
  - Crystal bar along with phi direction
  - 3~5 bars in each layer, bar length 35~46cm
  - 460 bars in Z direction.
- Even-layer:
  - Crystal bar along with z axis.
  - Bar length ~ 38 cm, 12 bars in each layer.
  - 132~184 bars in phi direction.
  - \* Have a 0.7cm blank.



#layer	block length/mm	bar length/mm
1	1867	373.4
3	1827	365.4
5	1787	357.4
7	1747	436.8
9	1707	426.8
11	1667	416.8
13	1627	406.8
15	1587	396.8
17	1547	386.8
19	1507	376.8
21	1467	366.8
23	1427	356.8
25	1387	462.3
27	1347	449.0

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Present: Finished ideal geometry construction(need validation).

