



Laboratoire d'Anecy-le-Vieux
de Physique des Particules

Hcal Geometry (second version)

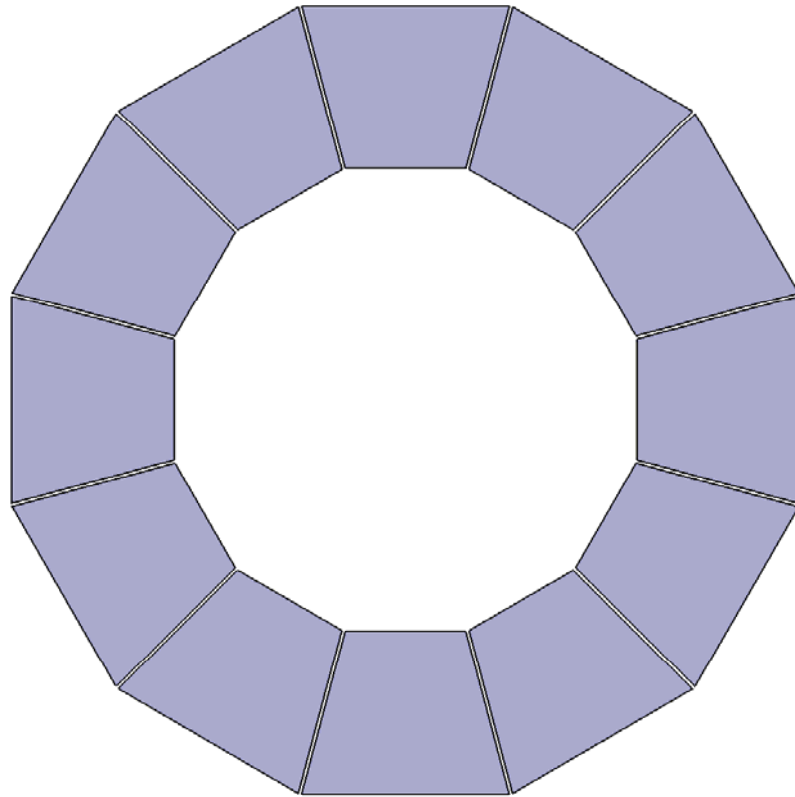
December 2007, 20th



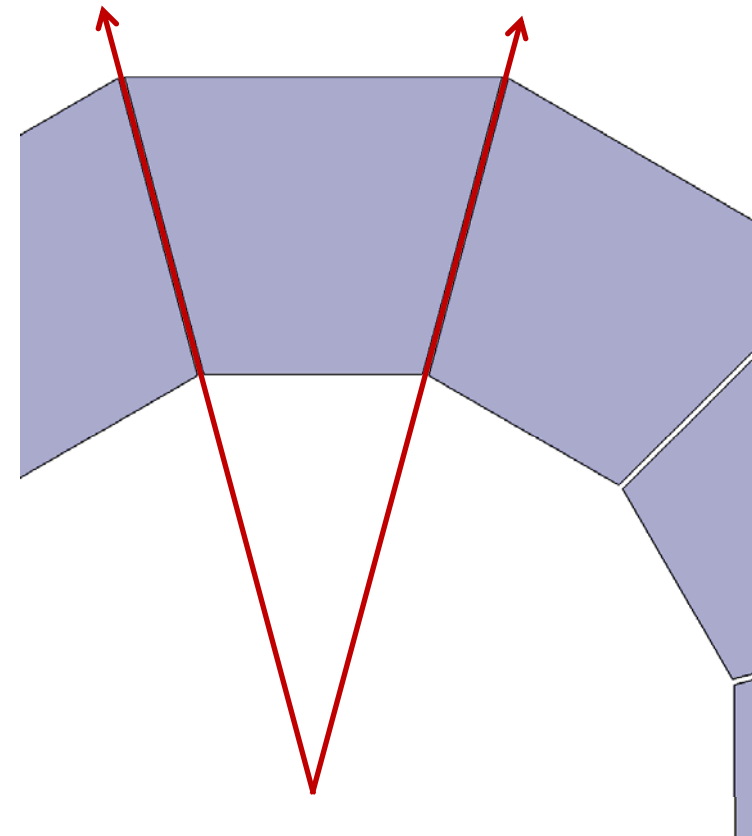
Study of a new Hcal geometry...

**...motivation: « cracks »
in the calorimeter**

(muons are lost, hadrons ?)



Classical geometry



Study of a new Hcal geometry...

- 1st version -

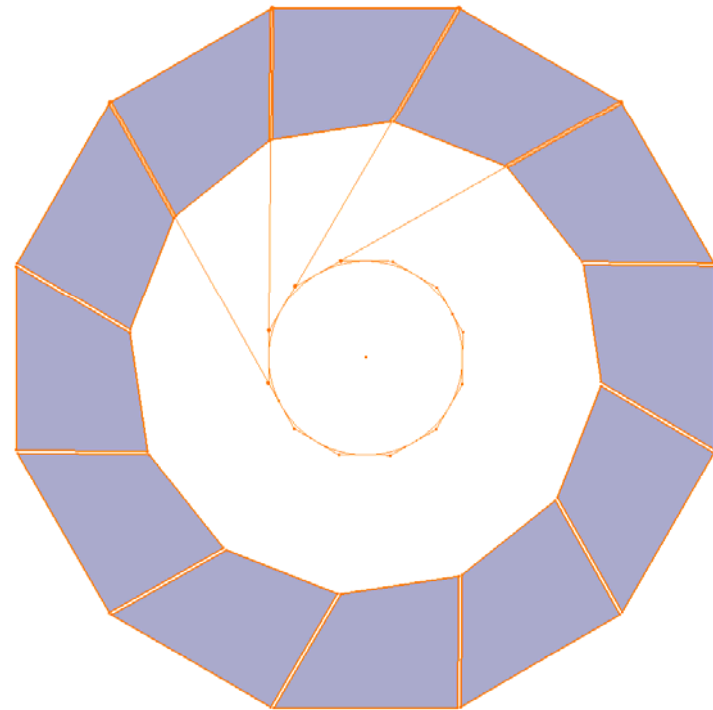
In order to avoid cracks, the edges should not point to the center of the barrel

➔ **Proposal of a first tilted geometry**

First version :

The edges are **tangent to a circle**, centered on the beam axis.

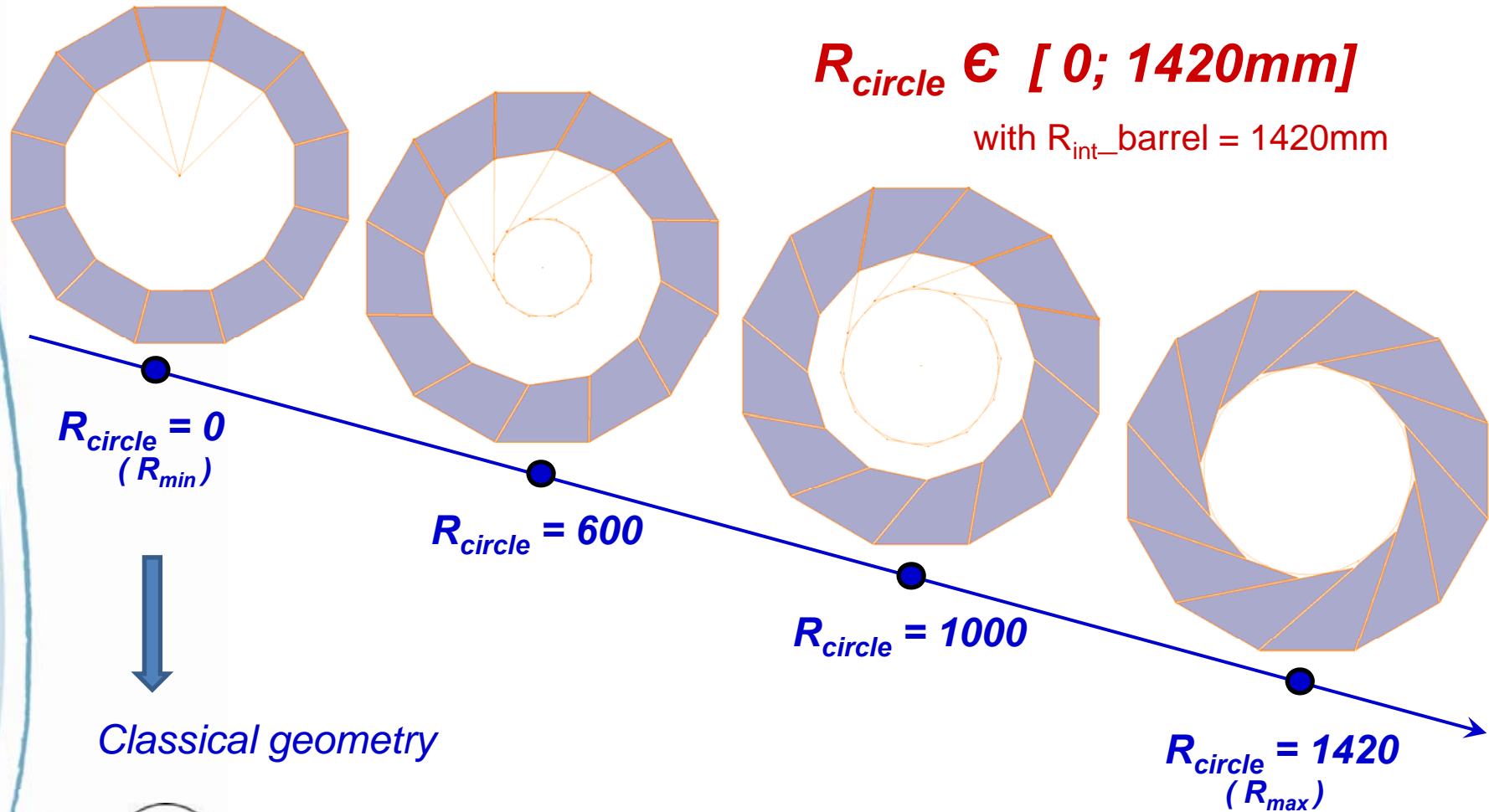
The **circle radius** is the parameter which determinates the tilt level



Study of a new Hcal geometry...

- 1st version -

Examples of tilt level as a function of the tangent circle radius



Study of a new Hcal geometry...

- 2nd version -

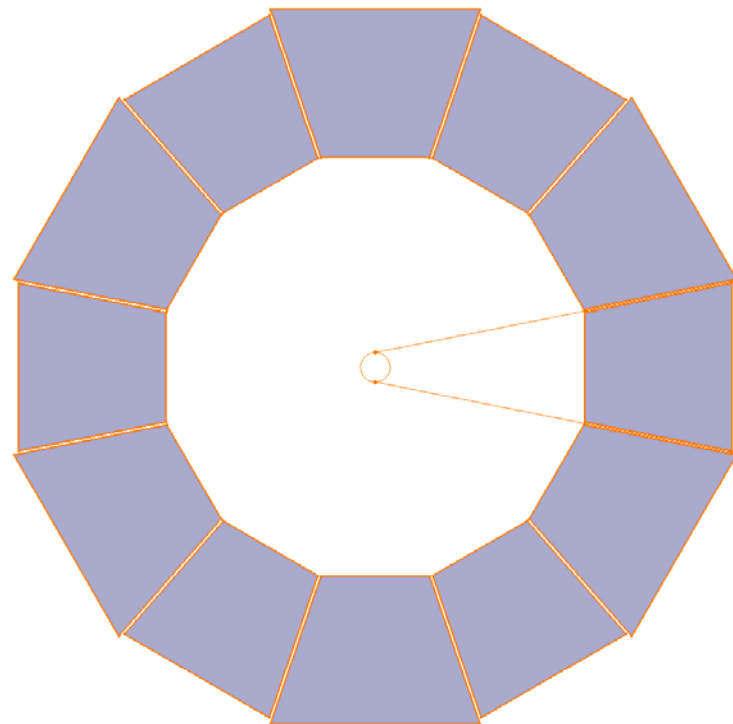
In order to avoid cracks, the edges should not point to the center of the barrel

➔ **Proposal of a second tilted geometry**

Second version :

*The 2 edges of a module are **tangent to a circle, in an opposite way***

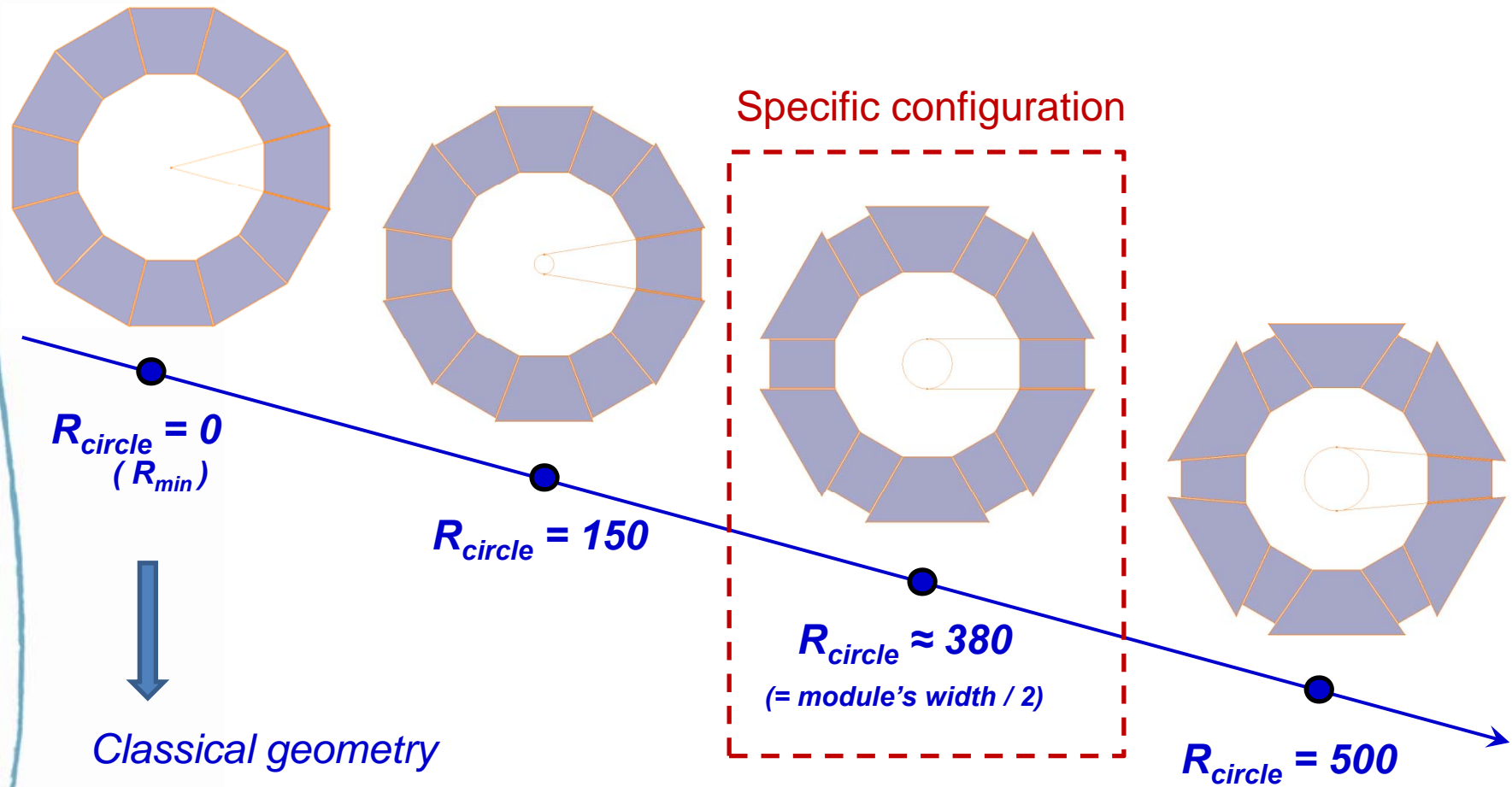
*The **circle radius** is the parameter which determinates the tilt level*



Study of a new Hcal geometry...

- 2nd version -

Examples of tilt level as a function of the tangent circle radius

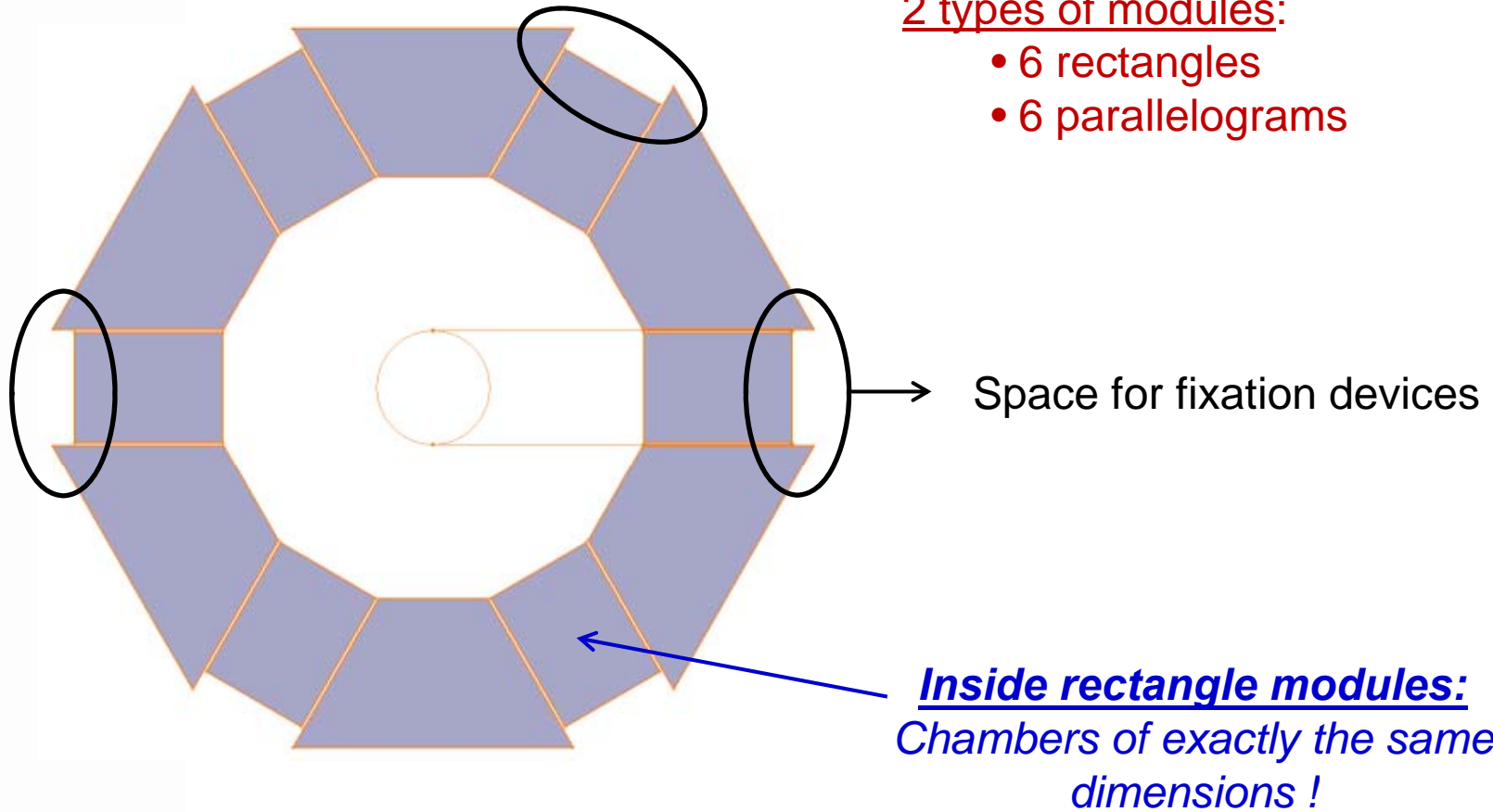


Study of a new Hcal geometry...

- 2nd version -

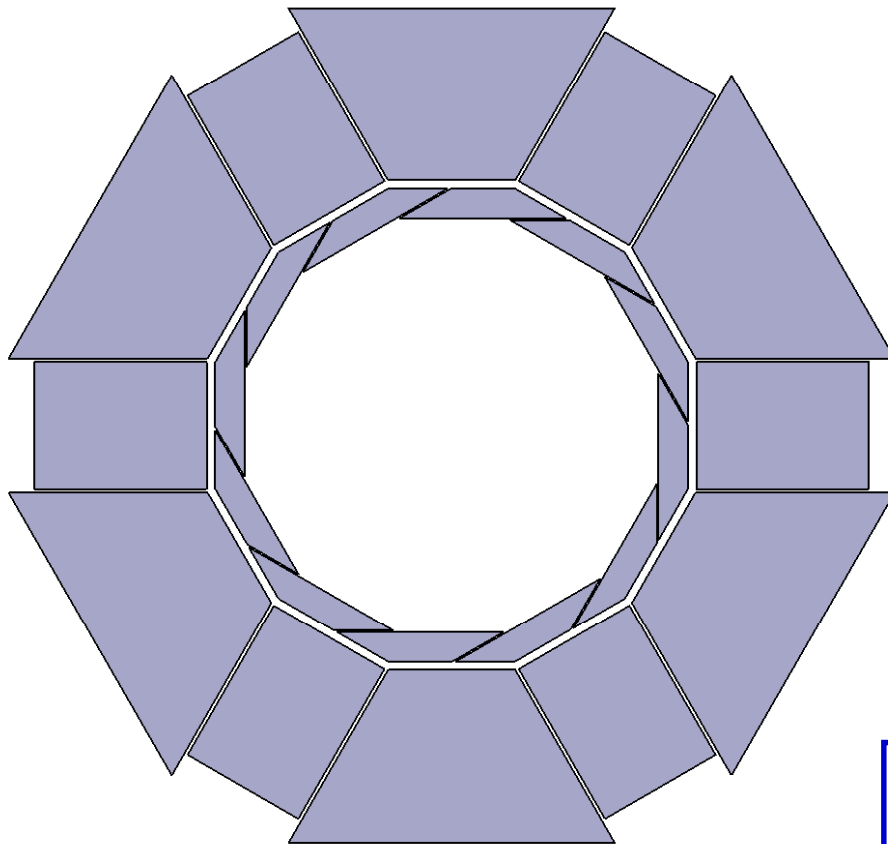
Specific configuration :

$$R_{\text{circle}} = \text{module's width} / 2$$



Study of a new Hcal geometry...

- 2nd version -



12 Modules' bottom :
same dimensions



Easy integration of EMcal
(see *Marco Oriunno's presentations*)

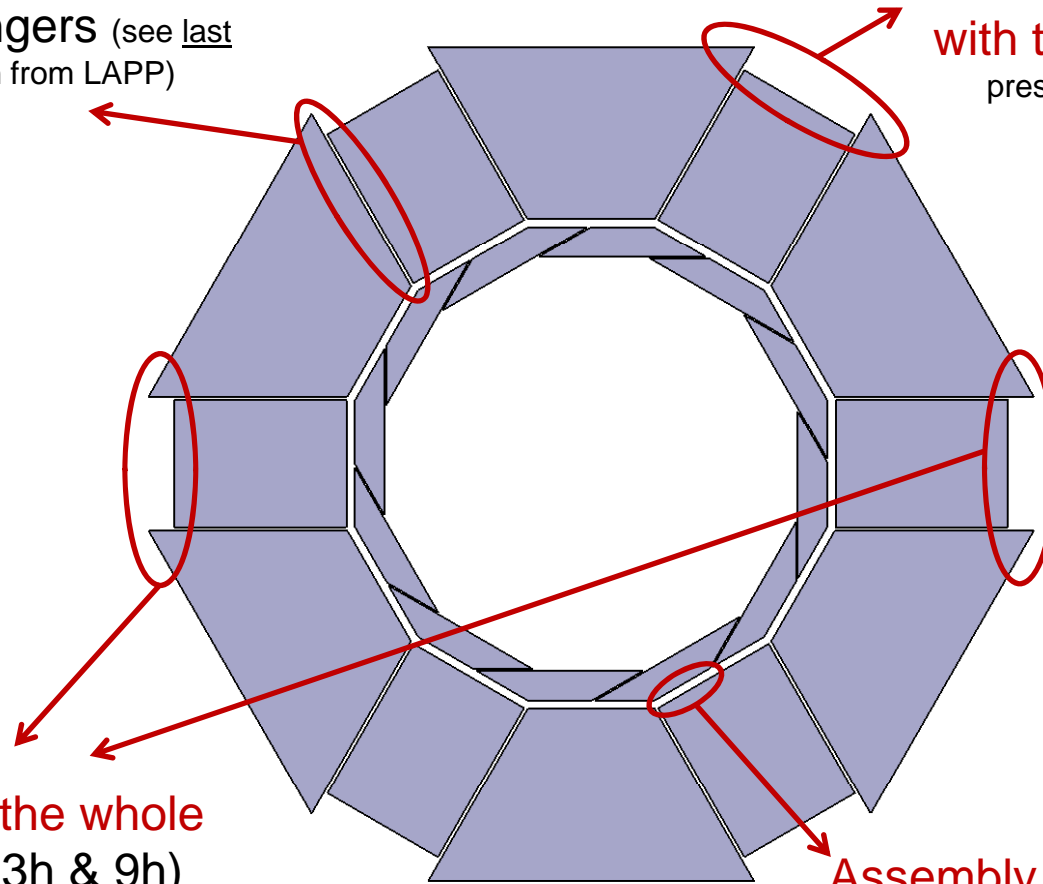
No cracks crossing
(neither in EMcal nor in Hcal)

Study of a new Hcal/EMcal assembly...

- 2nd version -

Assembly of a module:
use of stringers (see last
presentation from LAPP)

Assembly of a module
with the others (see next
presentation from LAPP)



Fixation of the whole
structure (3h & 9h)
(see next presentation from LAPP)

Assembly of EMcal wedges
with Hcal: use of rails
(see Marco's presentation)