Other useful functions: INCLUDE, ROTATE, TRANSLATE, OFFSET

Another useful functions will be presented with insertion of the reflexing pannel of an auditorium created earlier. In order to do so we will use the INCLUDE command which is located in the upper part of the MASTER.GEO file. After decommentation of the file we can overwrite the file name that we want to merge – in this case it's PANEL.GEO: INCLUDE PANEL.GEO

Attention! As we remember, the point indexing in the included file started with 1 – in order to avoid conflicts, we need to add a constant number to them – it takes the variables offsetpl and offsetco mentioned in the beginning of the course – we ass them in the PANEL.GEO file above the CORNERS section:

offsetpl 200

offsetco 200

Now we can refresh the model by pressing:

Save and Run



And we get:

It surely is not the expected result and so we need to move and rotate the inserted pannel. In order to do this, we will use the **TRANSLATE and ROTATE** functions. In order for them to work directly in the PANEL.GEO file, they need to be preceeded by the word OBJECT. The commands we need have the following syntax: ROTATE ; rx ry rz TRANSLATE ; tx ty tz

The rx, ry and rz mean the rotations about the X,Y and Z-axis and the tx, ty and tz mean the tranlations following the directions of each axis.

In this case, after adjusting values, the PANEL.GEO file looks as follows:

ABS panel <15 0 3 4 5 14 >

OBJECT OFFSETPL 200 OFFSETCO 200 ROTATE -61 0 0 TRANSLATE 0 -0.5 4.2

CORNERS

loop(1,kat,0,45,9,-4,2*cos(kat),3*sin(kat)) loop(7,kat,0,45,9,4,2*cos(kat),3*sin(kat))

PLANES

[*5 1 panel // 1 2 8 7 / panel]

Our set model:



The reflexing pannels are used, for instance, in order to direct the sound wave towards the audience. The CATT-Acoustic programme allows following the directions of the reflexions. In order to do so we need to opent the Geometry View/Check window and choose:

Geoffie	try view/check
PL9-files 2D ✔ Four views	* 🔄 🔲 Source info 🛛 🗌
3D ✔ Colored	* 🗹 🕑 Plane info 🛛 🗌
Source info	*
Initia	l view settings
For 3D-viewer Shaded.0GL * Include contours	Auto load file in viewer
Debug ☐ Immediate ✔ Create file ☐	Assume closed model for Interactive RT estimation
Help * = include	markers OK Cancel

And the button next to it:

Geometry view/check		
PL9-files 2D ✔ Four views × Source info ×		
3D ✓ Colored * ✓ ✓ Plane info * Source info * ✓ ✓ Corner info * ✓ Refl. info Initial view settings		
For 3D-viewer For 3D-viewer Auto load file in viewer Include contours		
Debug Immediate Assume closed model for ✓ Create file Interactive RT estimation		
Help * = include markers OK Cancel		

We pick the numbers of planes for which we want to follow the reflextions:

	Reflection info planes
	Range: 201 to 205
	Level Level
I	Edit
	Remove
9	Free form edit
	OK Cancel

We confirm with the OK button:



Eventually we choose the REFLINFO.PL9 tab in the browser window. The grey lines present the direction of the sound reflexions given by the reflexion pannel we installes. Clearly, a right match of such system is not easy and it most likely needs lower number of modules and lowering the radius of the circle that the pannel is open on.

