

# Problem info

Problem type: AC Magnetics , frequency: 1 Hz,

Geometry model class: Axisymmetric

Problem database file names:

- Problem: *multi\_layer\_shield.pbm*
- Geometry: *Multi\_layer\_shield.mod*
- Material Data: *Multi\_layer\_shield.dhe*
- Material Data 2 (library): *none*
- Electric circuit: *none*

Results taken from other problems:

- *none*

# Geometry model

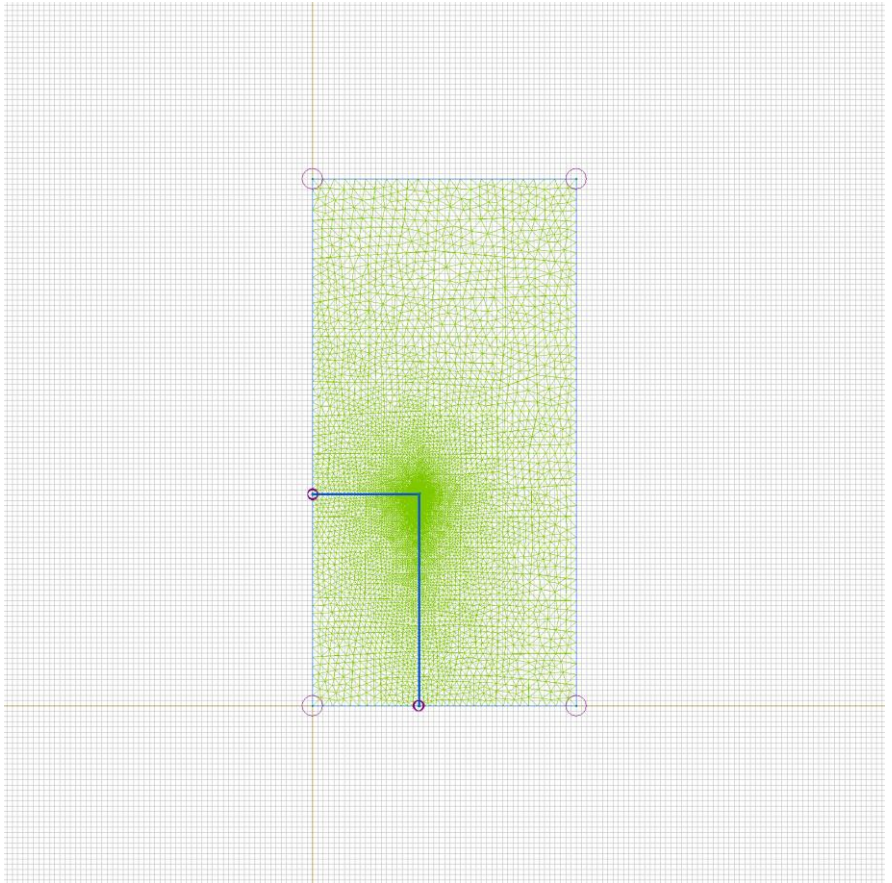


Table 1. Geometry model statistics

	With Label	Total
Blocks	3	7
Edges	3	28
Vertices	1	22

Number of nodes: 10776.

# Labelled objects

There are following labelled objects in the geometry model (Material Data file could contain more labels, but only those labels that assigned to geometric objects are listed)

Blocks:

- [air](#)
- [copper](#)
- [mu\\_metal](#)
- 

Edges:

- [side](#)
- [top](#)
- [bottom](#)
- 

Vertices:

- [testpt](#)
- 

Detailed information about each label is listed below.

Labelled objects: block "air"

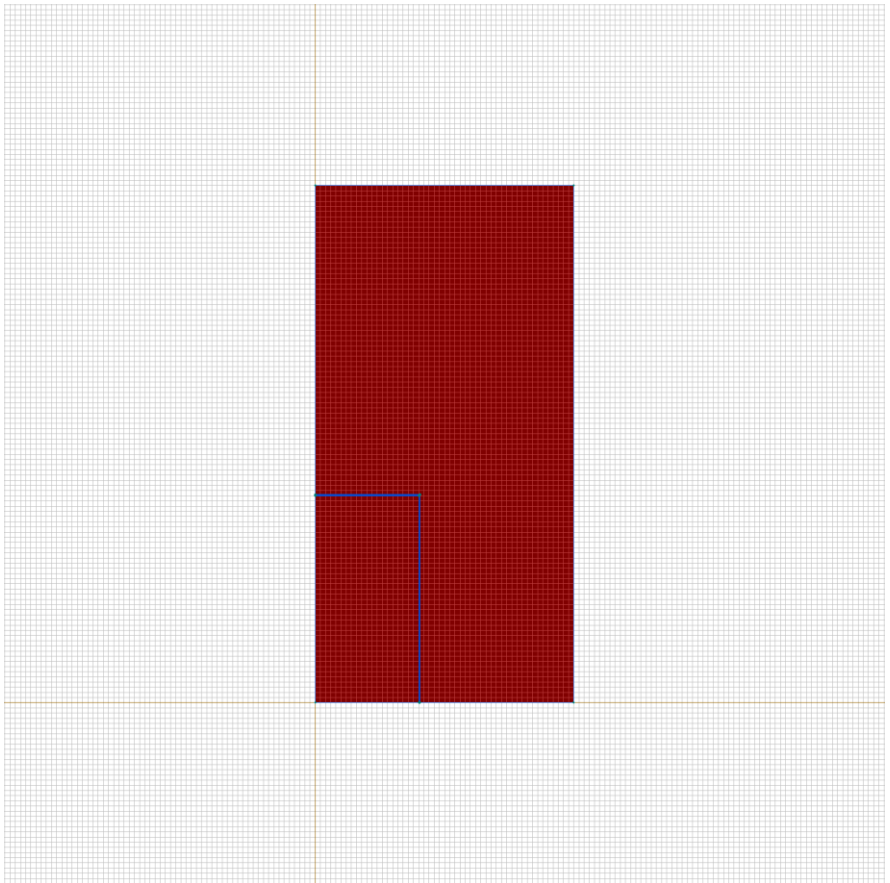
There are (4) objects with this label

Relative magnetic permeability:  $\mu_x=1$ ,  $\mu_y=1$

Electric conductivity:  $\sigma=0$  [S/m]

Current density:  $j=0$  [A/m<sup>2</sup>], phase 0 [deg]

Conductor's connection: in parallel



Labelled objects: block "copper"

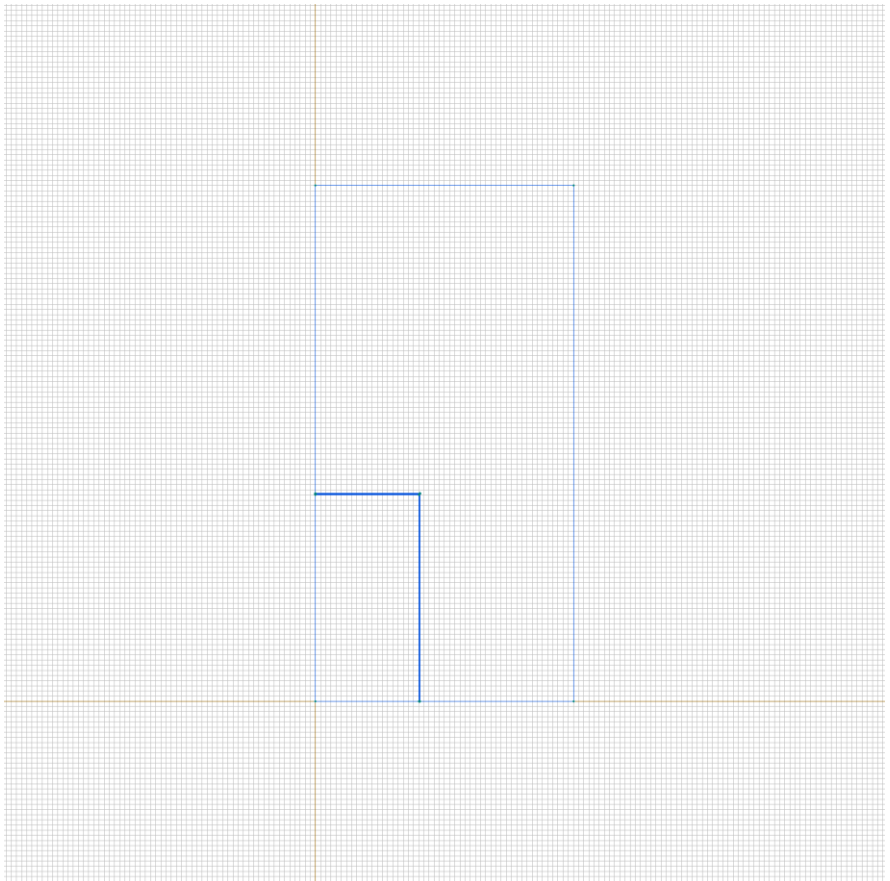
There are (2) objects with this label

Relative magnetic permeability:  $\mu_x=1$ ,  $\mu_y=1$

Electric conductivity:  $\sigma=100000000$  [S/m]

Current density:  $j=0$  [A/m<sup>2</sup>], phase 0 [deg]

Conductor's connection: in parallel



Labelled objects: block "mu\_metal"

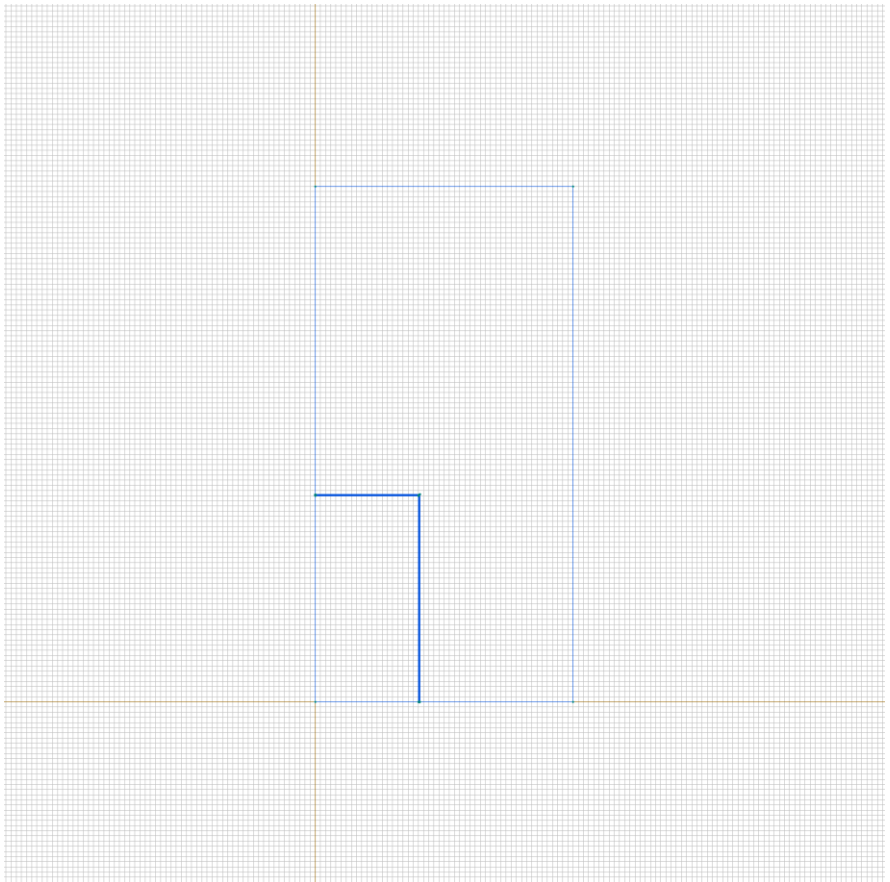
There are (1) objects with this label

Relative magnetic permeability:  $\mu_x=10000$ ,  
 $\mu_y=10000$

Electric conductivity:  $\sigma=1000000$  [S/m]

Current density:  $j=0$  [A/m<sup>2</sup>], phase 0 [deg]

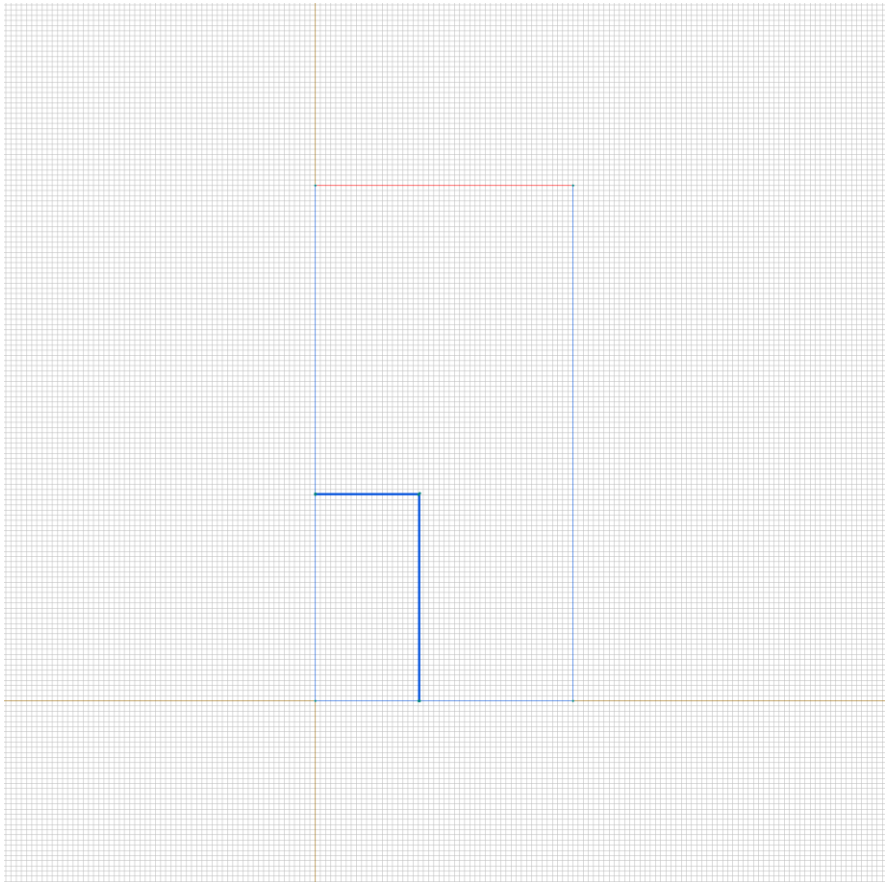
Conductor's connection: in parallel



Labelled objects: edge "side"

There are (1) objects with this label

Magnetic potential:  $A=0.000001$  [Wb/m], phase 0 [deg]

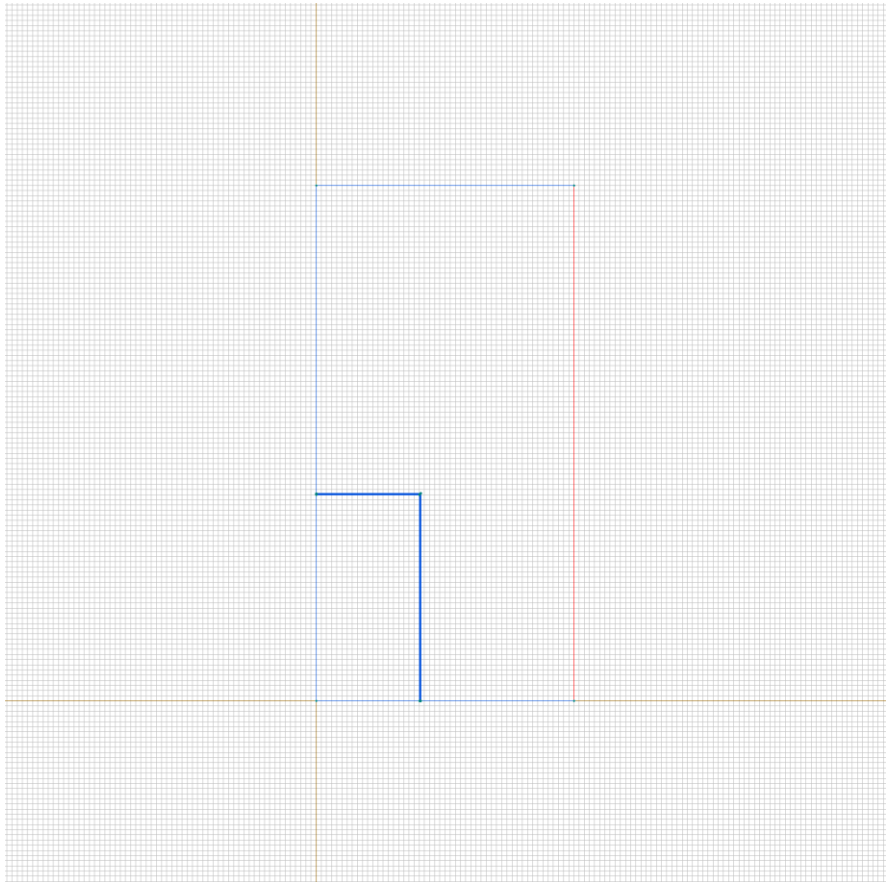




Labelled objects: edge "top"

There are (1) objects with this label

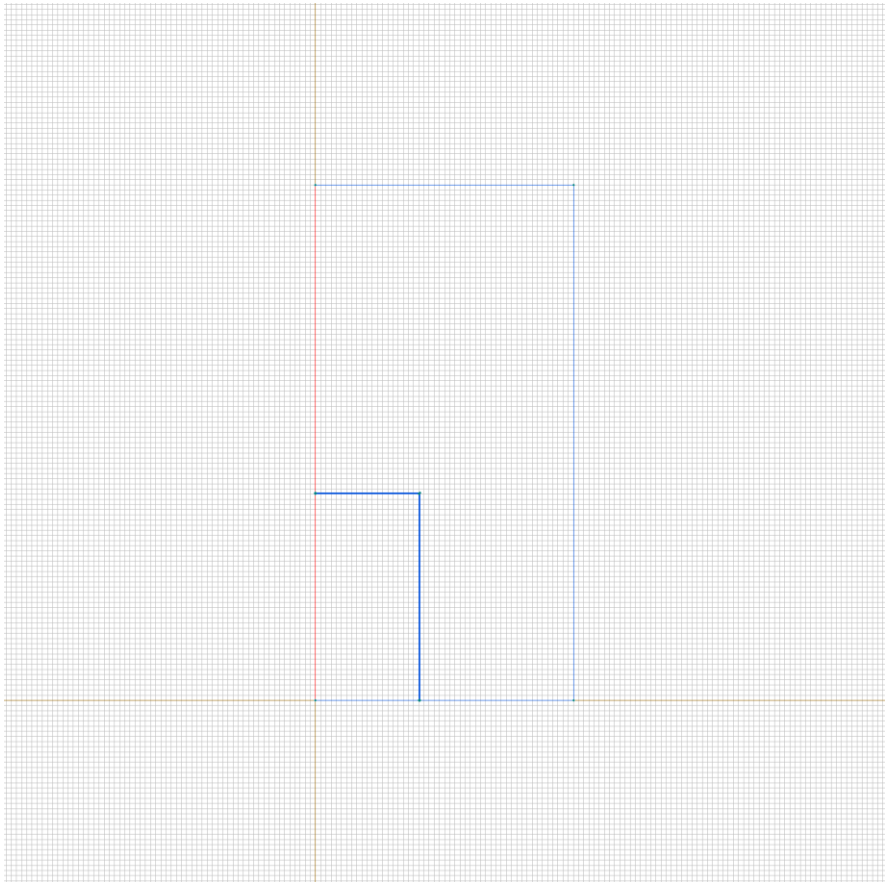
Tangential field:  $H_t=0$  [A/m], phase 0 [deg]



Labelled objects: edge "bottom"

There are (7) objects with this label

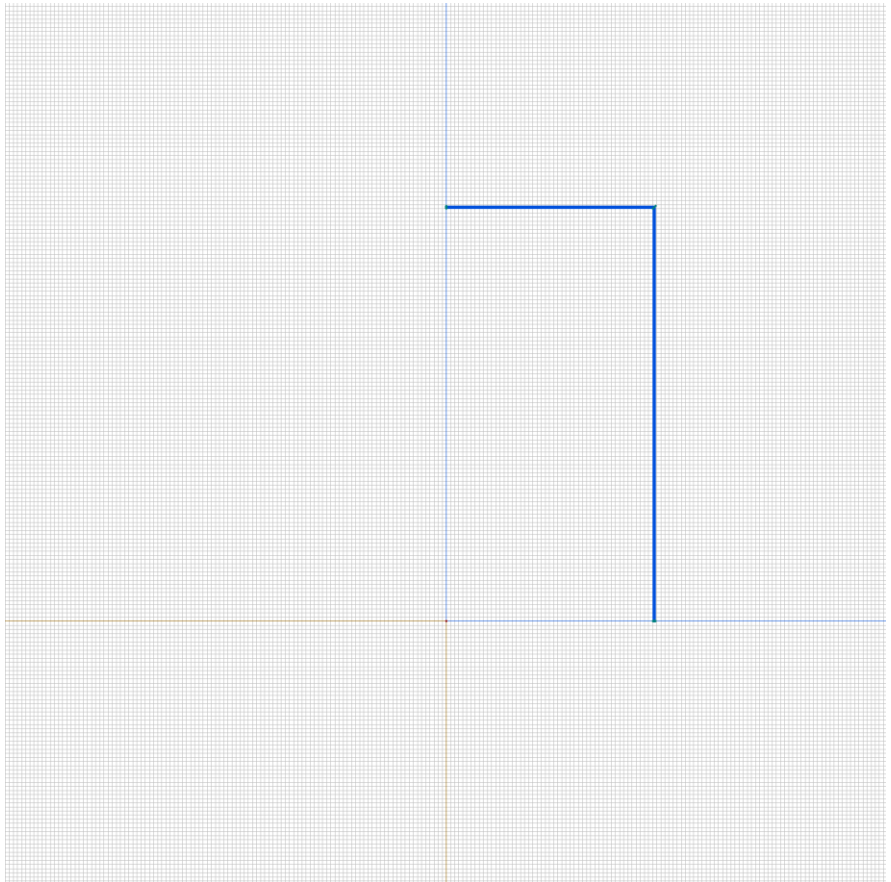
Tangential field:  $H_t=0$  [A/m], phase 0 [deg]



Labelled objects: vertex "testpt"

There are (1) objects with this label

No material data (boundary conditions) are specified

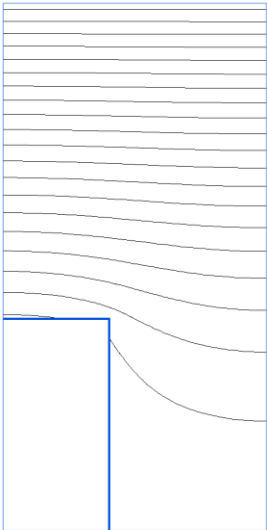






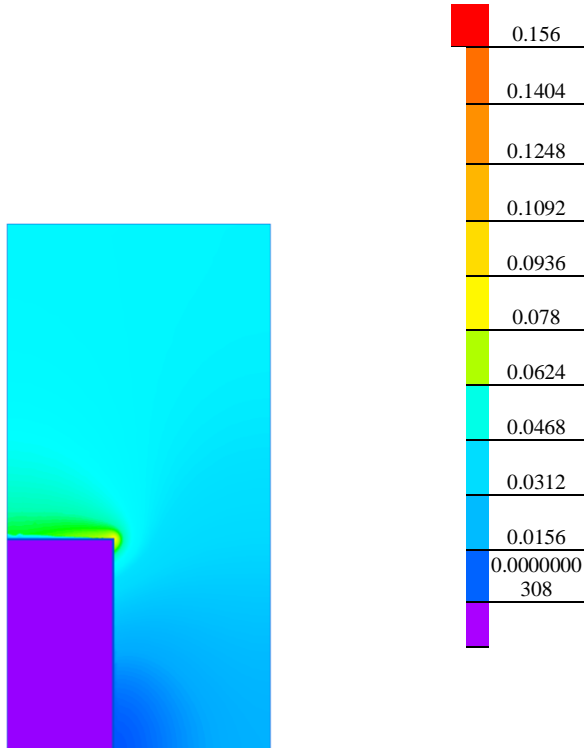
# Results

Field lines



# Results

Color map of Strength  $|H|$  [A/m]



# Nonlinear dependencies

No non-linear dependencies are used in this problem data